

Feeling the Vibrations: On the Micropolitics of Climate Change

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Stephanie Erev¹

Abstract

Climate change is more than a discrete issue demanding political attention and response. A changing climate permeates political life as material processes of planetary change reverberate in our bodies, affecting subterranean processes of attention and evoking bodily responses at and below the register of awareness. By way of example, I explore the register of bodily feeling to raise the possibility that proliferating anomalies in atmospheric, oceanic, and seismic activities are entering into subliminal experiences of time and confounding embodied expectations of how the future is likely to flow from the past. The essay concludes with a preliminary discussion of how micropolitical strategies to amplify visceral experiences of climatic changes might valuably contribute to larger programs for climate action.

Keywords

micropolitics, climate change, bodily feeling, perceptual abstraction, nihilism

Global warming . . . is always much farther along than it appears.

Elizabeth Kolbert¹

¹Johns Hopkins University, Baltimore, MD, USA

Corresponding Author:

Stephanie Erev, Johns Hopkins University, Baltimore, MD 21218, USA.

Email: erev@jhu.edu

Feeling the Vibrations

As the planet warms, ecological communities worldwide are increasingly in flux. Witness the purple emperor butterfly, for example, which has migrated more than 125 miles in less than a decade.² Or the wildflower seasons extended by more than a month in some regions as flowers no longer bloom all at once. This raises the question of how planetary warming is affecting communities of human beings. Does climate change influence political practice?³

My essay is premised on the idea that local climates—the temperatures, rhythms, sounds, and other intensities of place—help to compose the qualities of lived experience. On this view, climate change is more than a discrete “issue” demanding political attention and response. A changing climate permeates political life as material processes of planetary change reverberate in our bodies, affecting subterranean habits of attention and evoking bodily responses at and below the register of consciousness. Such attention to micropolitics augments the literature’s predominant focus on what subjects think, feel, and perceive *about* climate change with questions of how large-scale planetary changes might be *influencing* processes of thought, feeling, and perception on a more visceral register. By way of example, I concentrate on the register of bodily feeling to raise the possibility that proliferating anomalies in atmospheric, oceanic, and seismic activities are entering into subliminal experiences of time and confounding embodied expectations of how the future is likely to flow from the past.

Although the meaning of both micropolitics and bodily feeling should become clearer as the essay progresses, I will say a few words about them here. By bodily feeling I do not mean the sense of touch—the coarseness of sweater fibers chafing your skin or the cool, spongy wetness of a dog’s nose brushing up against your hand.⁴ Bodily feelings are not so much conscious feelings of or about something (the sweater, the dog’s nose) as they help to compose an *affective background* of consciousness. Let me offer an example. If you are a hearing person, your days are filled with sounds of various sorts. Some of these sounds draw your focus while others hum distantly in the background as sounds you can hear but which do not command your listening attention. Yet there are other sorts of sounds you cannot hear, which nevertheless exert real effects on your being. “Infrasonic or subsonic energy,” explains the artist Mark Bain, “is sound below the hearing threshold. Your experience of it is physical, vibrational”; inaudible sonic vibrations do “strange things to physiology and psychology,” Bain says, often registering as “a kind of anxious feeling, anxiety, a heaviness.”⁵ To the extent such sounds are “heard,” their call resounds in the body. For the conscious subject, the experience is

less aural than atmospheric; although inaudible sonic vibrations do not appear directly to consciousness (i.e., as sounds), they imbue the objects that do appear with affective intensity, consistency, and tone.

In the context of global warming, as Elizabeth Kolbert explains, any climatic changes visible today are the result of “greenhouse gases emitted decades ago.”⁶ “[W]hatever you can see,” Kolbert continues, “is the past of climate change; the present is still invisible.”⁷ A number of observers have interpreted the lagging perceptibility of global warming to be a partial explanation for why so many people who profess belief in climate change nevertheless make few ostensible changes to their way of life, even as they possess the means to do so. The lag is politically “important,” then, “in that agents make decisions (including on natural resource management) based on individual perceptions.”⁸ I believe a focus on the micropolitical register—on the material, embodied processes through which higher-level conscious perceptions, identifications, and commitments are formed and reformed—can aid contemporary efforts to imagine both how a changing climate makes itself felt in cultural and political life and what means can be brought to bear in response to it. For the microphysical effects of climate change are real, viscerally felt portents in the present of larger-scale events to come.⁹

This raises the possibility that unusual bodily feelings and vague micro-anxieties engendered by them are finding expression in forms of political speech and action not widely associated with the politics of climate change. Might such feelings be stoking white nationalists’ paranoid fixations on white futurity, for example?¹⁰ Or fanning enthusiasms for border securitization (“*Build the wall!*”)? Or helping to spark eruptions of praise for sexual violence, mounting assaults on reproductive freedom, and intensifying demands for conformity to the cis-heteronormative status quo? Such questions seem to me to warrant serious attention.¹¹ In this essay, however, I focus on the possibility that positive micropolitical interventions can assist people formally committed to climate action to combat what William E. Connolly calls “passive nihilism.”¹² Passive nihilism, briefly, names the uncanny coexistence within individuals and groups of “explicit admission” of the need for action and “tacit evasion” of opportunities to take it.¹³ Connolly’s idea is that stubborn, perhaps unconscious attachments to a world susceptible to mastery by (certain) human beings defang more recent, cognitive beliefs in the dangers of a rapidly warming planet. By intervening in activities on the visceral register of being—where culturally informed attachments and “sensibilities trigger the responses of those imbued with them even before they begin to think about this or that event”—micropolitics can work against such uncanny obstacles to a more robust response.¹⁴

The notions of micropolitics and bodily feeling can appear counterintuitive if, like Hannah Arendt, you suppose the material domains of the body and the earth obey strict laws of biological necessity and, as a result, threaten to overwhelm human capacities for action. The value Arendt places on action, and the real creativity she attributes to it, could potentially inspire climate action today.¹⁵ But to draw a categorical relation of hyper-separation in this way between matter-life (“nature”) on the one hand and freedom, creativity, and meaning (“culture”) on the other seems to me to promote habitual inattention to and perhaps quiet disdain for life’s own creative and destructive powers. It seems also to forfeit a range of potentially valuable (micro)political practices because of their association with the body.¹⁶ In a recent essay Lida Maxwell responds to Arendt’s critique of *love* as a private, antipolitical force by proposing a vision of love that can also be “world-disclosing” as it “len[ds] a particular kind of significance to . . . human/nonhuman relationships, language, things and settings,” “revealing them . . . as a ‘world’ that may be(come) a site of collectively oriented speech and action.”¹⁷ I focus here on the *body* as an indispensable site and process of sense-making with a public dimension of its own. For “outside” ecological forces participate in what is often assumed to be the most private domain of all—namely, that of experience—in a process I call eco-poiesis. One wager of my essay is that understanding ecological forces as participants in aspects of our experience may in turn foster greater attentiveness to climatic changes that *are* perceptible today as it promotes a sense that changes in climate are changes in ourselves.

Of course, numerous people and peoples already feel this way. Whereas many in European settler colonial societies tend to learn about climate change through highly mediated fora such as cable news and social media, as Daniel R. Wildcat of Muscogee (Creek) Nation argues, “American Indian and Alaska Native awareness of climate change is the result of practical lifeway experiences and sensitivity to the rhythms of seasons that make them particularly knowledgeable about what is going on where they live.”¹⁸ Kyle Whyte of the Citizen Potawatomi Nation explains that increasingly, “Indigenous peoples . . . are calling on settler nations like the U.S. to finally live up to moral and just expectations for diplomacy and reciprocal responsibility by taking care of shared environments, including the climate system,” while also acknowledging “climate change as the *unprecedentedly old* ecological crisis that it is.”¹⁹ Yet Eurocentric images of the human as “autonomous from, and in control of, the natural world,”²⁰ as Wildcat and Raymond Pierotti observe, may obstruct settler societies from fulfilling responsibilities of care as such images deny relations of reciprocity with other forms of life and inorganic systems. Meeting these responsibilities would require that settler cultures, in Robin Kimmerer’s

words, “redefine their evolving relationship with nature,”²¹ though without appropriating Indigenous values or traditional ecological knowledge.²² Rather, settler cultures must forge new values and modes of valuation appropriate to a more-than-human world.²³

Here I draw on minor traditions of European philosophy, literature, and art to explore how micropolitical interventions on the visceral register might productively channel uncanny vibrations felt at the level of the body into a more palpable sense of the need for action.²⁴ Crucially, then, how the micro-physical effects of climate change play out ethically and politically cannot be determined in advance in my view. Such effects are (a more subliminally felt version of) what Davide Panagia calls “sensation”: the often fleeting experience of unrepresentability that arises when something encountered in experience cannot readily be placed under familiar categories or forms.²⁵ Experiences of sensation are experiences of the more-ness of life, of excesses escaping even our best efforts to name and organize a more-than-human world. This is why sensibility is so important. For how people receive and respond to experiences of excess—experiences, again, of life’s own vitalities and of one’s entanglements with them—is apt to vary considerably between those with visceral attachments to ideals of individual autonomy, human supremacy, or (European) sovereignty and those whose sense of self tends rather to be augmented on occasions when life takes them by surprise. Bodily feelings of a changing climate could thus be received as “traumatic,” as Michael Richardson proposes,²⁶ but so too could they register as what Maxwell calls “wonder”—an “experience of striking puzzlement, strangeness, or novelty” that is also an “experience of pleasure that unsettles our unthinking habits and conventions.”²⁷

Part two of this essay develops the idea of eco-poiesis. Through readings of Lord Byron’s poem “Darkness,” texts on the philosophy of affect and process, and engagements with the sciences, I explore how ecological forces help to compose the rhythms and qualities of experience. Surveying recent anomalies in atmospheric, oceanic, and seismic activities at different scales, I then raise the possibility that such anomalies are making themselves felt as disturbances within subliminal experiences of time. In part three I inquire whether amplifying such subliminal experiences through artistic means could help bring the issue of climate change more vividly into conscious attention and concern. These proposals speak less to “*how we ought to live*” than to how we might “*enrich experience* in ways that,” in Anatoli Ignatov’s words, “increase awareness of our embeddedness within a larger system of forces, energies and flows.”²⁸ By strengthening “powers of perception” and modulating entrenched habits of attention, micropolitics seeks to “alter future patterns of thought, action and feeling.”²⁹ Micropolitical interventions are not

sufficient on their own, of course. But they can valuably contribute to a larger assemblage of tactics for transformation.

Eco-poesis

Has a *force* ever been demonstrated? No, only *effects* translated into a completely foreign language. We are so used, however, to regularity in succession that its oddity no longer seems odd to us.
Friedrich Nietzsche³⁰

In 1815, a furious eruption at Indonesia's Mount Tambora rocked weather systems round the world. "The climate," one commentator notes, "changed overnight."³¹ Volcanic ash shrouded the atmosphere like a drape—"blott[ing] out much of the sun for more than a year"—and spawned what would come to be known as the year without a summer.³² Thousands of miles away, residents of China, Europe, and North America felt the impact of Tambora in the zany weather it unfurled: "snowfalls in June, dry fogs, streaky sunsets, and unseasonal storms."³³ But the disorder did not stop there. Riots erupted as crop failures left many to starve and many more to abandon their homelands in search of something to eat.

Numerous works of art from this period sought to capture the effects of such strange weather upon civic life. Instead of figuring unruly planetary forces as *extrinsic* to culture (as Jean-Jacques Rousseau had done with the Lisbon Earthquake), works of art such as Lord Byron's poem "Darkness" explore the *entanglements* of human and nonhuman systems.³⁴ In so doing, they make the diverse micropolitical effects of unusual weather more available to thought. For example, "Darkness" points to citizens' transformed sensory experiences to account for transformations within civic culture. It seeks an explanation for the fraying social fabric in strange new textures of perception.

I had a dream, which was not all a dream.
The bright sun was extinguished, and the stars
Did wander darkling in the eternal space . . .
Morn came, and went—and came, and brought no day
And men forgot their passions in this the dread of their desolation; and
all hearts
Were chill'd into a selfish prayer for light³⁵

As morning comes and goes and "br[ings] no day," the effects of this unrelenting darkness exceed a mere disruption of the routines of daily life.

Experience itself takes on unusual textures and tones; the character of thought is affected: “I had a dream, which was not all a dream.”³⁶ The poem suggests ecological patterns of light and temperature *enter into* experience as they help to compose our very habits of perception—and, further, that large-scale disturbances to such patterns can confound habitual ways of relating and behaving among citizens. As “Darkness” unfolds, readers bear witness to the increasingly menacing impacts of a transmogrified sensorium on civic life. As endless darkness undermines formerly familiar modes of comportment among citizens, it gradually erodes the binds that once held them imperfectly together—until, ultimately, the last two citizens on earth perish of their mutual alienation: “they lifted up their eyes as [light from a flame] grew lighter, and beheld each other’s aspects—saw, and shriek’d, and died—even of their mutual hideousness they died, unknowing who he was upon whose brow famine had written fiend.”³⁷

Byron’s poem thus dramatizes how large-scale disturbances to “natural” processes (e.g., atmospheric circulation) can enter into and affect “cultural” ones (e.g., civic engagement). Yet such disturbances are not essentially corrosive of sociality, as Byron might be read to imply here. For, to cite one example, in the immediate aftermath of the devastating 1906 San Francisco earthquake, William James observed how residents quickly “sought the greater safety of the street and yielded to the passionate desire for sympathetic communication.”³⁸ “Above all,” James recalls, “there was an irresistible desire to talk about it, and exchange experiences.”³⁹ Today, large-scale processes of climatic change—global warming, for instance—seem to defy encounters of the sort described by Byron and James. Such processes are, in Timothy Morton’s parlance, “hyperobjects”; they are “things that are massively distributed in time and space relative to humans.”⁴⁰ One implication of this misalignment seems to be that humans, on Morton’s account, cannot gain an understanding of hyperobjects or even become better acquainted with them by indirect means; hyperobjects are “impossible to point to,” as Michael Richardson puts it, glossing Morton, “except via abstraction or symptom.”⁴¹ It is true that *subjects* tend to experience time and space in a linear and geometric fashion respectively, but the *body* experiences and participates in space-times of its own.⁴² The body is replete with its own modes of experience that differ qualitatively from conscious experience even as they help to organize and intone the higher-level experience of the subject (as we saw in the case of inaudible sonic vibrations).⁴³ Later I will suggest that tuning into uncanny bodily feelings offers a way to become better acquainted with climatic changes as changes in us.

Greater attention to subterranean capacities for receptivity and responsiveness reveals that although experience tends to be understood in Western

cultures as private through and through, in fact, ecological forces participate in dimensions of experience in ways that destabilize commonsense understandings of the boundaries delineating self-other-world. I pursue this theme here under the heading *eco-poesis*: forces on the “outside” of experience nevertheless participate in its composition.⁴⁴ “[W]e are not self-contained,” as Teresa Brennan has noted, “in terms of our [affective] energies. There is no secure distinction between the ‘individual’ and the ‘environment.’”⁴⁵ In her work on the transmission of affect, Brennan finds that although vision is almost always understood to be the dominant mode of affective reception (i.e., via sight-based imitation), this has more to do with the desire for self-containment than with the reality of how affects travel from body to body. For if affective transmission is restricted to visual perception alone, she says, “then on the face of it, our boundaries stay intact.”⁴⁶ Yet “external” affective influences come to inhabit us through a wide variety of means, often without our explicit awareness. By way of “unconscious olfaction,” for example, an “unnoticeable odor” can significantly alter one’s overall mood.⁴⁷ “[P]eople can act alike and feel alike,” Brennan says, “not only because they observe each other but also because they imbibe each other via smell.”⁴⁸ Notably, then, these “external” influences need not appear as objects of experience (the odor went unnoticed) in order to make a difference to it. This is also true of nonhuman ecological forces, as anyone who has endured jetlag or seasonal affective disorder is likely to understand intuitively. Stimulating capacities for receptivity and responsiveness “below the level of consciousness,” patterns of light and darkness help to compose the rhythms of our experience as they participate in “the timing of daily cycles of alertness, sleep and wake, mood, body temperature, and other internal cycles.”⁴⁹ Each of us is party to many more exchanges and participates in many more publics than we know or could know.

Consider the force of “ambient vibrations,” a term employed by some engineers to denote the relatively regular ground vibrations in any given region—vibrations generated by activities in the oceans and the atmosphere and at the surface of the earth.⁵⁰ They are referred to as “ambient” to capture the relative regularity of activities within these domains—the relatively regular patterns of wind currents, ocean waves, and vehicle traffic, for example, in any given place. They are referred to as “vibrations” to signal their capacity to move bodies—including *our* bodies—as they travel and transmit energy through them. As they move through our bodies, these energetic waves move us to the rhythms and tempos of the goings-on on the land, in the air, and in the sea. In this respect, ambient vibrations could be described as subliminal influences exerted by wind patterns, ocean waves, and seismic activities on the day-to-day goings-on of life on the ground. While they do not rise to the

level of conscious feeling, ambient vibrations enter into and help to compose the rhythms of everyday experience—they form part of our subliminal experiences, that is to say, of regularity. As these relatively regular patterns of vibrations move through our bodies at relatively regular intervals, they impress relative regularity on us.

Today, however, dozens of rhythmic anomalies are rippling through the land, the air, and the sea. Familiar weather patterns are intensifying dramatically in some regions and making unprecedented appearances in others.⁵¹ Scientists have observed extreme fluctuations in the strength and geography of wind patterns such as the Pacific Trade Winds, for example, and recently witnessed an “unprecedented disturbance” to the quasi-biennial oscillation—a “regular variation of the winds that blow high above the equator”—which, until recently, was thought to be the “most repeatable mode of natural variability seen anywhere in the atmosphere.”⁵² Indeed, the record-breaking (for now) rainfall of Hurricane Harvey was precipitated in part by the slowing-down of atmospheric circulation systems such as the jet stream.⁵³ Meanwhile, energy sector activities such as wastewater disposal and hydraulic fracturing have contributed to a “dramatic increase” in recent years in what geologists call “induced seismicity,” or earthquakes triggered by human activities; *hundreds* of earthquakes have erupted in Ohio, Oklahoma, Texas, and Arkansas over the past ten years alone.⁵⁴

Before considering how such irregularities may be making themselves felt on the register of bodily feeling, let us explore one further vibrational novelty—this time one that, while it resonates differently in different places, is intense enough to send shock waves across the surface of the earth. Glaciers are massive ice-bodies on the move—accumulated snowflakes surfing flows of meltwater underfoot. When glaciers abut large bodies of water, they periodically engage in a process called “calving,” during which hunks of ice known as icebergs “calve” off from the glacier into the waters below. Sometimes the icebergs are of sufficient mass that their “falling over generates a big enough force” to push “back on the glacier, making it move backward and downward for several minutes,” in an event known as a “glacial earthquake.”⁵⁵ Glacial earthquakes are seismic events “detectable anywhere with seismic equipment”—they make themselves felt, that is, across the surface of the earth.⁵⁶

Vibrations emanating from seismic events “shake the earth as they move through it and, when the waves reach the earth’s surface, they shake the ground and anything on it”—including *us*.⁵⁷ Compared to terrestrial earthquakes, which strike suddenly and all at once, glacial earthquakes unfurl at a more lumbering pace— “[i]nstead of taking just seconds and generating rapid shaking, like an earthquake from the San Andreas Fault, a glacial earthquake

can last a minute.”⁵⁸ This durational difference manifests seismographically, too; glacial earthquakes can be distinguished from terrestrial earthquakes by “the unique shape of the waveforms they generate.”⁵⁹ Once screened out of seismological data as “noise,” glacial earthquakes are now studied in their own right as, in the words of one commentator, “the pulse of ice loss”; a 2015 study found that glacial earthquakes occur seven times more often than they had during the 1990s.⁶⁰ Today glacier seismologists assess “the extent of global warming’s impact in the vibrations it causes.”⁶¹

To better imagine how anomalies, intensifications, and other irregularities infiltrating ambient vibrations might register viscerally, I turn next to the phenomenon of *animal predictions*—to what Friedrich Nietzsche refers to as animals’ “prophetic faculty regarding the weather.”⁶² Reports of nonhuman animals “predicting” seismic and atmospheric events have circulated since the time of the ancient Greeks. In *De Natura Animalium*, for example, Roman author Aelian recounts the story of a mass animal migration just before an earthquake-tsunami hit Helice, Greece, in 373 BCE:

[F]ive days before Helice disappeared all the mice and martens and snakes and centipedes and beetles and every other creature of that kind in the town left in a body by the road that leads to Cerynea. And the people of Helice seeing this happening were filled with amazement, but were unable to guess the reason. But after the aforesaid creatures had departed, an earthquake occurred in the night; the town collapsed; an immense wave poured over it, and Helice disappeared.⁶³

More recently, meteorologists in Oklahoma traced the source of strange blobs on their radar maps to an avian swarm: thousands of birds across the state had suddenly taken to the skies en masse fifteen minutes before local seismographs registered a magnitude-5.6 earthquake.⁶⁴ Several years before that, human observers at the National Zoo in Washington, DC, noted “strange” behavior among many of the animals there. This behavior registered as strange to the human observers, because the animals seemed to be responding to a danger that was not there—red-ruffed lemurs cried out in alarm; a gorilla named Mandara “shrieked and grabbed her baby . . . racing to” safety atop a nearby structure; “64 flamingos . . . cluster[ed] together in a nervous huddle”—sometime between several seconds and a full fifteen minutes before humans (and seismographs) registered an earthquake’s arrival at the surface of the earth.⁶⁵ Indeed, *human* animals appear to exhibit such diversity of response times too; a fortuitously timed audio recording of a performance at a California high school captured audience reactions as a minor earthquake hit: “at least one person voiced alarm 3 seconds before the rest of the audience . . . reacted.”⁶⁶

Nietzsche turns to prophetic animals as part of an effort to elucidate the phenomenon of prophecy among human beings—these latter animals, he says, tend to overlook one of prophecy’s key dimensions. Nietzsche admonishes his readers: “[y]ou have no *feeling* for the fact that prophetic human beings are afflicted with a great deal of suffering; you merely suppose that they have been granted a beautiful ‘gift,’ and you would even like to have it yourself.”⁶⁷ In order to play up what his readers overlook about prophecy, Nietzsche “express[es] [him]self in a parable”:

How much may animals suffer from all the electricity in the air and the clouds! We see how some species have a prophetic faculty regarding the weather; monkeys, for example. . . . But we pay no heed that it is their *pains* that make them prophets. When a strong positive electrical charge, under the influence of an approaching cloud that is as yet far from visible, suddenly turns into negative electricity and a change of the weather is impending, these animals behave as if an enemy were drawing near and prepare for defense or escape; most often they try to hide: They do not understand bad weather as a kind of weather but as an enemy whose hand they already *feel*.⁶⁸

Nietzsche dramatizes affinities across species differences to reorient his readers’ thinking about both the character and the temporalities of the prophetic.

Prophecy, Nietzsche tells us, has a corporeal dimension: it is the animals’ *pains* that make them prophets. On this telling, prophecy is a complex activity involving heterogeneous processes of thought-perception operating at various speeds on multiple registers of being. Such a multifarious image of prophetic thinking helps to explain how prophecy can *feel* what is not consciously perceived (the approaching cloud is as yet *far from visible*); how, indeed, it can feel what could not be perceived consciously, for what it feels is *emergent possibility*: a rush, a flush, a pulse of incipience—or, more to the point, several at once. In this sense, the aesthetics of prophecy might be understood as a sort of *feeling around*, a vigilant groping for possibilities on the way. During this process, reflective awareness may or may not come into play; if it does, this will happen only after bodily feeling and action are already under way: “these animals behave as if an enemy were drawing near and prepare for defense or escape. . . . They do not understand bad weather as a kind of weather but as an enemy whose hand they already *feel*.” Thus reflective awareness, if it comes, comes late. And it seeks, as it were, to be brought up to speed. This is prophecy as *presentiment*: “[a]n intuitive feeling about the future; an expectation or . . . impression of something about to happen, *esp[ecially]* one with no apparent or definite foundation.”⁶⁹

Presentiment brings bodily feelings of emergent possibilities into, and thereby *informs*, embodied expectations of how the future is likely to flow from the past. My suggestion is that the proliferating vibrational anomalies of a changing climate may subtly inflect our orientations to the future—unknownst to us—through the novel rhythms and tempos they impress on subterranean registers of being. As they testify to future instabilities in the present, anomalous vibrations may induce a subliminal sense that “what comes after will not be like what came before.”⁷⁰

Micropolitics and Sensibility Formation

Writing shortly after the release of the IPCC’s special report on climate change, Bill McKibben suggests “we’re at the point where even an all-out effort would probably be too slow.”⁷¹ By this McKibben means that the official goal of preventing planetary warming of greater than 1.5°C now seems all but impossible to achieve. “Given the grim science,” McKibben goes on to say, “it’s a fair question whether *anything* can be done to slow the planet’s rapid warming.”⁷² But the “stakes are so high . . . that we must still try to do what we can.”⁷³ For the difference between 1.5°C and 2.0°C is (among many other differences) the difference between survival and submersion for low-lying places and ways of life with which they are entangled.⁷⁴ To achieve the required scale and rate of systemic change—“global carbon dioxide emissions will have to fall by 45 percent by 2030, and reach net zero by 2050”—“we need a major shift in our thinking,” McKibben says, “strong enough to make the climate crisis a center of our political life rather than a peripheral question easily avoided.”⁷⁵ If climate change already pervades political life in the effects it has on our bodies, could becoming better attuned to these effects shift the balance on the macropolitical register as well?

Why, in dramatizing the corporeal dimension of prophecy, does Nietzsche present his turn to nonhuman animals as a *parable* rather than, say, a *metaphor*? What ethical or spiritual lesson did he hope to impart? Nietzsche never says, so far I can tell. But raised in this context, the question points to the importance of micropolitics (and arts of the self) to achieve the depth of ethico-political transformation required today. For Nietzsche, although visceral registers of experience are not available to direct observation by the conscious subject, they are amenable to indirect probing and investigation; and this “questioning of the body,” as he sometimes calls it, can valuably contribute to practices of ethical cultivation.⁷⁶ In contrast to Arendt, for whom bodily activities are senseless, “automatic, independent of our [subjective] activities and irresistible,”⁷⁷ the Nietzschean body is populated by microsubjects of various sorts—all of whom can also be understood as “thinking, feeling,

willing,” albeit at lower degrees of complexity than the “thinking, feeling, willing” of the macrosubject or self. In questioning the body, Nietzsche says, “we try, if you like, to see whether the inferior parts themselves cannot enter into communication with us.”⁷⁸

Earlier I proposed that opposing nature to culture as Arendt tends to do may promote habitual inattention to the activities and creative capacities of the body and the earth (and nonhumans of all sorts). Of course, Arendt is hardly the only European thinker to make agency the exclusive provenance of human beings. The Arendtian conviction that, in her words, “politics is never for the sake of life” seems to me to be a dramatic articulation of a widely if imperfectly shared sense in many Western cultures that the meaningfulness of human life and the things worth doing as human beings stand opposed to the “mere” earthly parts of our being.⁷⁹ Alfred North Whitehead calls this a bifurcated nature, and he worries about its effects on thinking.⁸⁰ For in order to sustain such a vision, “a scientific realism, based on mechanism” must somehow be “joined to an unwavering belief in the world of men and of the higher animals as being composed of self-determining organisms.”⁸¹ For Whitehead, this “radical inconsistency at the basis of modern thought” is concerning in that it fosters a “half-hearted” and “wavering” ethos.⁸² My concern is that it may also promote an exaggerated sense of estrangement from the other happenings of life on earth. This in turn risks tempering formal commitments to climate action as it dampens capacities to sense as meaningful planetary changes under way.

Western dualisms have long, bloody histories.⁸³ Today, operating in the viscera, in received habits of perception, and in language, such imagined categorical relations circulate within and between many of us in the form of unthought thoughts as they quietly channel attention and action in certain directions without coming up for critical reflection or debate. They can be understood in this respect as elements of common sense at work on the register of sensibility. According to Panagia, experiences of sensation are experiences of unrepresentability that “interrupt our conventional ways of perceiving the world and giving it value.” For this reason, he says, experiences of sensation are “moments of political possibility”; “they invite occasions and actions for reconfiguring our associational lives.”⁸⁴ This essay has proposed that as large-scale processes of planetary change make themselves felt on visceral registers of being, they may generate uncanny atmospheres in which unthought thoughts are more readily susceptible to rethinking in the service of new ways of relating to one another and a more-than-human world. Micropolitical practices of attunement to strange bodily feelings can aid these efforts as they translate across scales of bodily experience and

conscious awareness.⁸⁵ Before I discuss such practices at greater length, let me say a bit more about what I understand their potential to be.

Although I see promise in micropolitics to refashion political sensibilities in more ecological directions, I do not believe such promise to be universal. For example, I suspect that heightened experiences of climatic changes would likely create reactive formations among people who are apt, for one reason or another, to give priority to resentment over opportunities to forge new commitments and ways of life.⁸⁶ Among those who are open, however, for one reason or another, to positive experiences of entanglement and urgency, combining practices to amplify visceral experiences of climate change with critical reflection upon the real participation of ecological forces in our personal and shared experiences may aid the composition of expressly more-than-human histories, futures, and legacies. Doing so may also enliven otherwise rather abstract senses of obligation to others, including to people at greater and more immediate risk thanks to (for example) ongoing histories of colonialism, imperialism, and petro-capitalism and who have called on those in privileged positions to act. As Jane Bennett has written concerning the importance of micropolitics in a different context, without “the bodily disciplines through which ethical sensibilities and social relations are formed and reformed,” any “principle or policy risks being just a bunch of words. There will be no greening of the economy, no redistribution of wealth, no enforcement or extension of rights without human dispositions, moods, and cultural ensembles hospitable to these effects.”⁸⁷ Perhaps now people bring greater enthusiasm to existing climate action programs. Or perhaps such combined tactics help to stimulate the formation of new agendas that were unavailable to thought and feeling within old frameworks and senses of possibility. I use the language of “perhaps” and “has the potential to” partly because the future is open to some degree and each new event can make a real difference, but also because there is no guarantee such efforts will succeed.

What might such efforts look like? Let’s explore a few examples. Especially promising for the purposes of this essay are micropolitical techniques Paul Jasen calls “perceptual abstraction,” which take “bodily contingency as their medium” as they aim “to confound perception” and “retexture experience in peculiar ways.”⁸⁸ Arts of perceptual abstraction “stage encounters with atypical forces that put bodies at variance with themselves, forcing sensory rearrangements and conceptual adaptations.”⁸⁹ For this reason, Jasen says, such artworks can be understood as “invitation[s] to explore . . . how the moving, sensing body might be induced to experience itself and its surroundings differently.”⁹⁰ Numerous artists in recent years have deployed techniques of perceptual abstraction to bring imperceptible vibrations into conscious experience and thereby render nonhuman agencies more available to thought.

Vibration artist Mark Bain has explored ways of channeling what he calls “the ‘screamingness of the earth,’ its countless, constantly active, inaudible pulsing and vibration,” for example, by “collating seismological information, increasing its frequency range, amplifying its volume, and stretching it out in time to render it audible.”⁹¹

Moon Ribas, a self-described “cyborg” artist, makes use of diverse technologies to become better attuned to imperceptible earth processes she then translates into art for a larger audience. Ribas is perhaps best known for having implanted seismographs in her feet as a way to “feel earthquakes in real time.”⁹² “Depending on the scale of an earthquake,” as one commentator explains, she will “get a weaker or stronger vibration as a way to sense what she calls the ‘heartbeat of our planet.’”⁹³ In *Waiting for Earthquakes*, Ribas translates these vibrations into dance; “‘whenever there is an earthquake,’ she says, ‘I move according to the intensity of the earthquake. It’s a bit like a duet between the earth and myself.’”⁹⁴ Even as she is mindful of their dangers, Ribas embraces technologies for their capacity “to communicate phenomena that we cannot perceive with our senses”—to “reveal this reality and get a deeper experience of the planet.”⁹⁵ Her extra-human feet produce “‘a new sense,’ she says, ‘and it changes my perception of reality.’”⁹⁶ Raviv Ganchrow investigates “the acoustic properties of land—not in terms of some abstracted soundscape,” he says, “but rather in terms of the concrete transmissive properties of local materials and geo-activity.”⁹⁷ Ganchrow’s work is more explicitly focused on production than translation; rather than translating inaudible sounds into discrete objects of audition, he employs transducers to create “acoustic territories” where visitors can encounter ecologies of sounds-in-place that are otherwise off-limits to them.⁹⁸

Combining arts of perceptual abstraction with both politically focused narratives and collective encounters in public spaces, *The Work of Wind: Air, Land, Sea*, a large-scale contemporary art project in Mississauga, Toronto, sought to “expand perspectives on climate change through artistic practice, cultural inquiry, and community activation.”⁹⁹ Featuring thirteen artist projects, *The Work of Wind* facilitated encounters with the *work* of earthly forces—that is, with their efficacies—in everyday settings, where such forces do not otherwise appear and where their vital role in composing the histories and presents of these places is not always considered by the humans who traverse them. As complements to the art installations, the show’s organizers are publishing a range of literatures, including books and pamphlets with contributions from artists, activists, and philosophers who give narrative form to and express the significance of these forces as they are felt within diverse communities, situating climate change within lived histories of imperialism, colonialism, and petro-capitalism. “While the title of the project

series might suggest a weather project,” the organizers note, “it is not about wind but of wind, of the forces of composition and decomposition predicated on the complex entanglements of ecologies of excess, environmental legacies of colonialism, the financialization of nature, contemporary catastrophism, politics of sustainability, climate justice, and resilience.”¹⁰⁰ In this respect, *The Work of Wind* is a staging ground from which more ecologically inflected political sensibilities might emerge—“an invitation to the city’s publics to create memorable encounters with art, in the common struggle for a healthy, vibrant future.”¹⁰¹

In this essay, I have endeavored to give expression to some of the ways that climate change may be affecting political life below the register of representation. My idea is not that representation is unimportant to climate change politics. Rather, it is that climate change also changes bodies, including bodies politic, from within. I have also suggested that becoming better attuned to material interruptions of common sense, if they are affirmed, has the potential to help those in privileged positions feel the urgency of what they cannot yet see. Eco-poetics, a tradition of writing (and reading) that moves back and forth between macro- and microregisters, seems to me to offer great promise in this regard.¹⁰² For as Angela Hume and Gillian Osborne propose, “while poetry may not transform human systems, the practice of eco-poetics can constitute an openness to what exists or what might exist.”¹⁰³ Unlike related literary traditions such as nature writing, where, as Petra Kupperts has argued, “‘nature’ has so often stood for ‘nonhuman,’ an other to be penetrated, conquered, awed by, or saved,” eco-poetics stresses entanglements and reciprocity.¹⁰⁴ Eco-poetics is a medium of expression through which heightened experiences of ecological forces—for example, in Byron’s “Darkness”—can be captured in verse and shared (if imperfectly) with others as verses are read aloud to larger audiences. Poetry’s powers of word-play may also inspire experiences of sensation that give way to new ways of thinking about problems that once seemed settled or resolved.

The reading and writing of poems such as “Darkness” may thus aid contemporary efforts to imagine the diverse effects of a changing planet on civic life. Expressing the influence of an altered climate on the tenor and tone of civic life, such poems have the potential to both *instruct* and *energize* those struggling to come to terms with large-scale planetary transformations under way—transformations including rising oceans, intensifying extreme weather events, protracted wildfire seasons, and accelerating species extinctions. Eco-poetic practice can be *instructive* in the sense that such poems induct their readers into a style of perceiving and otherwise experiencing that is highly attuned to the entanglements of human and nonhuman systems, even across great distances of time and space. In the words of one critic, “poetry imagines

and presents a sensibility, often a new sensibility, that shows readers what their sensibility might be.”¹⁰⁵ It can be *energizing* in that a more profound sense of the fragility of human systems in an entangled world has the potential to invigorate existing efforts to halt extractivism and other destructive and unjust colonialist agendas. Eco-poetics are micropolitical, then, in the *aesthetic-affective* education they afford in entanglements. I will conclude with several lines from “Two Degrees,” a work of eco-poetics by Marshallese poet and activist Kathy Jetñil-Kijiner:

The other night my 1-year-old was a fever
 pressed against my chest
 We wrestled with a thermometer
 that read
 99.8 degrees
 the doctor says
 technically
 100.4
 is a fever
 but I can see her flushed face
 how she drapes
 across my lap, listless
 ...
 And I think
 what a difference
 a few degrees
 can make
 ...
 ...a colleague tells me 2 degrees
 is just a benchmark for negotiations
 I tell him for my islands 2 degrees
 is a gamble
 at 2 degrees my islands
 will already be under water
 this is why our leaders push

for 1.5
Seems small
like 0.5 degrees
shouldn't matter
like 0.5 degrees
are just crumbs
like the Marshall Islands
must look
on a map...
Maybe I'm
writing the tide towards
an equilibrium
willing the world
to find its balance
So that people
remember
that beyond
the discussions
numbers
and statistics
there are faces
all the way out here
there is
a toddler
stomping squeaky
yellow light up shoes
across the edge of a reef . . .¹⁰⁶

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Notes

1. "Reporting on Climate Change," in *Climate Change: Picturing the Science*, eds. Gavin Schmidt and Joshua Wolfe (New York and London: W. W. Norton & Company, 2009), 70–71, at 70.
2. Craig Welch, "Half of All Species Are on the Move—And We're Feeling It," National Geographic Online, April 27, 2017, <https://news.nationalgeographic.com/2017/04/climate-change-species-migration-disease/>.
3. The question of how a changing climate influences political practice has received a variety of responses in the literature. Understandably, many focus on a perceived *lack* (or at least insufficiency) of response at the level of institutions, particularly in countries with over-industrialized economies. Scholars cite Western capitalist hegemony, institutional inertia, denialist propaganda, voter "ignorance," and the so-called free-rider problem as possible explanations for widespread resistance to change where it is needed most. At the level of individuals, emotions of fear or despair at the prospect of climate catastrophe are said to incline people away from action that might foreclose it. I believe such studies to be important, and many have valuably informed my thinking on these issues. However, macropolitical analysis seems to me to be insufficient to the question at hand. For two helpful summaries of the recent literature on climate change politics, see Thomas Bernauer, "Climate Change Politics," *Annual Review of Political Science* 16 (2013): 421–48 and Melissa Lane, "Political Theory on Climate Change," *Annual Review of Political Science* 19 (2016): 107–23.
4. My use of the term bodily feeling is indebted to philosopher Alfred North Whitehead. The body, according to Whitehead, is replete with modes of feeling that differ from higher-level, conscious feeling and perception but that help to color and intone the higher-order experiences of consciousness. Although sense perceptions are "without a doubt the sort of observations most prominent in our conscious experience," Whitehead says, these more vivid observations are conditioned by "an indefinite set of obscure bodily feelings which form a background of feeling with items occasionally flashing into prominence." *Modes of Thought* (New York: The Free Press, 1968), 152–53. The category of

bodily feelings also includes feelings of the body's own happenings. But as my essay is focused primarily on "outside" influences, I will not discuss internal feelings much here.

5. Quoted in Josephine Bosma, "Interview with Mark Bain," August 9, 1999, <http://www.nettime.org/Lists-Archives/nettime-l-9908/msg00023.html>. The type of psycho-physio effects induced by such vibrations varies (if imperfectly) with their frequencies. "Certain frequencies are known to induce bowel movements or headaches," Bain explains. And some low frequencies "can induce near religious experiences or even hauntings. Especially things below ten hertz. So there is the potential of these sounds having soothing aspects as well." (Ibid.)
6. Kolbert, "Reporting on Climate Change," 70.
7. Ibid.
8. Aili Pyhälä, Álvaro Fernández-Llamazares, Herta Lehvävirta, Anja Byg, Isabel Ruiz-Mallén, Matthieu Salpeteur, and Thomas F. Thornton, "Global Environmental Change: Local Perceptions, Understandings, and Explanation," *Ecology and Society* 21, no. 3 (2016), no page numbers. (This formulation may sidestep the question of how sense and perception are entangled. I return to this issue in parts two and three of the essay.) See the important work of Rob Nixon and Chase Hobbs-Morgan on slow violence and structural violence. My essay is consonant with their analyses as it also brings a greater focus on nonhuman agencies. See Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011) and Hobbs-Morgan, "Climate Change, Violence, and Film," *Political Theory* 45, no. 1 (2017): 76–96.
9. I am grateful to an anonymous reviewer for suggesting the formulation, "micro-physical effects."
10. I do not mean to imply that white nationalisms are the only nationalisms susceptible in this way. My essay focuses primarily on the United States because that is the region I know best.
11. To be clear, the idea is not that uncanny bodily feelings "cause" such expressions of support for historically resonant forms of resentment-fueled oppression; rather, it is that the feelings may intensify the desires. A pertinent question is whether approaching these and other resurgent drives to oppression and domination in the context of the growing planetary instabilities in which they are set would improve our understanding of them. My sense is that it would.
12. "In passive nihilism," according to Connolly, "persistent residues from past understandings and expectations now inhibit people from moving beyond a vague sense of loss, even if they no longer believe in the world that has been lost. Passive nihilists are weakened, anxious beings who doubt a providential God, or human exceptionalism, or sociocentrism, or climate gradualism. But they do not invest in alternative paths of meaning, responsibility, and activism partly because stubborn residues within and between them resist those investments and partly because they sense how disruptive political efforts would be to transform the institutions expressing them." *Facing the Planetary*:

- Entangled Humanism and the Politics of Swarming* (Durham and London: Duke University Press, 2017), 166.
13. *Ibid.*, 168.
 14. William E. Connolly, "The Evangelical-Capitalist Resonance Machine," *Political Theory* 33, no. 6 (2005): 869–86, at 873.
 15. I admire the posture of possibility promoted by Arendtian action even as I worry about the implicit telos of complexification it appears at times to assume, for example when Arendt says: "It may be better not to forget that, after all, our whole existence rests, as it were, on a chain of miracles, the coming into being of the earth, the development of organic life on it, the evolution of mankind out of the animal species." See "Freedom and Politics: A Lecture," *Chicago Review* 14, no. 1 (Spring 1960): 28–46, at 44.
 16. The term hyper-separation is Val Plumwood's and names an "emphatic form of separation that involves much more than just recognizing difference." In Arendt's case, "the nonhuman sphere" of nature—which includes the human body and the human activities Arendt associates with human survival (i.e., *labor*)—is "a hyper-separate lower order lacking any real continuity" with the higher order of human freedom and politics ("culture"). Plumwood, "Nature as Agency and the Prospects for a Progressive Naturalism," *Capitalism, Nature, Socialism* 12, no. 4 (2001): 3–32, at 12.
 17. "Queer/Love/Bird Extinction: Rachel Carson's *Silent Spring* as a Work of Love," *Political Theory* 45, no. 5 (2017): 682–704, at 685.
 18. "Climate Change and Indigenous Peoples of the USA," Introduction to Special Issue on "Climate Change and Indigenous Peoples in the United States: Impacts, Experiences, and Actions," Julie Koppel Maldonado, Rajul E. Pandya, and Benedict J. Colombi, eds., *Climatic Change* 120 (2013): 509–15, at 510.
 19. "Climate Change: An Unprecedentedly Old Catastrophe," *Grafting*, Issue 1 of *The Society for the Diffusion of Useful Knowledge* (June 2018): 8–9, at 8 (original emphasis), http://blackwoodgallery.ca/publications/SDUK_01_Grafting.pdf. The catastrophism pervading many Western discussions of climate change today, Whyte suggests, tends to betray elements of Eurocentrism (my term), for instance, when climate change is imagined "to be a catastrophe disruptive of today's ecological status quo" without any sense that "[t]oday's status quo... is already an Indigenous ecological dystopia." (*Ibid.*) Also see Whyte, "Is It Colonial Déjà Vu? Indigenous Peoples and Climate Injustice," in *Humanities for the Environment: Integrating Knowledges, Forging New Constellations of Practice*, eds. Joni Adamson, Michael Davis, and Hsinya Huang (London and New York: Earthscan Publications, 2016): 88–104.
 20. "Traditional Ecological Knowledge: The Third Alternative (Commentary)," *Ecological Applications* 10, no. 5 (2000): 1333–40, at 1333.
 21. "Native Knowledge for Native Ecosystems," *Journal of Forestry* 98, no. 8 (2000): 4–9, at 9.
 22. I note that what constitutes appropriation in this context is a subject of ongoing debate. See (for example) *The Climate and Traditional Knowledges*

- Workgroup, "The Ethics of Traditional Knowledge Exchange in Climate Change Initiatives," *Earthzine.org*, July 31, 2015, <https://earthzine.org/the-ethics-of-traditional-knowledge-exchange-in-climate-change-initiatives>; Raymond Pierotti and Daniel R. Wildcat, "Traditional Ecological Knowledge: The Third Alternative (Commentary)," *Ecological Applications* 10, no. 5 (2000): 1333–40; Deborah McGregor, "Coming Full Circle: Indigenous Knowledge, Environment, and Our Future," *American Indian Quarterly* 28, no. 3/4 (2004): 385–410; and Daniel R. Wildcat, *Red Alert! Saving the Planet with Indigenous Knowledge* (Golden, CO: Fulcrum Publishing, 2009). Here I aim to learn from Indigenous thinkers without appropriating Indigenous values or knowledge systems, although I acknowledge the line between "learning from" and "appropriating" is contestable and can be difficult to discern.
23. Kimmerer, "Native Knowledge for Native Ecosystems," 9.
 24. "Minor" refers in this context (to borrow Connolly's formulation) to "a tradition of dissonant perspectives that challenged human exceptionalism, socio-centrism, and imperialism from inside Euro-American thought in ways ignored or rejected by majoritarian theorists." *Facing the Planetary*, 204n28.
 25. "By sensation I mean neither sense nor perception (though both are crucially involved), but rather the heterology of impulses that register on our bodies without determining a body's nature or residing in any one organ of perception." *The Political Life of Sensation* (Durham, NC and London: Duke University Press, 2009), 2.
 26. "Climate Trauma, or the Affects of the Catastrophe to Come," *Environmental Humanities* 10, no. 1 (2018): 1–19. Richardson's use of "trauma" in this thoughtful essay seems to me to be largely in the service of novelty even as it also affirms that the new *demands* of us—and that such demands often hurt.
 27. "Queer/Love/Bird Extinction," 688.
 28. "Practices of Eco-sensation: Opening Doors of Perception to the Nonhuman," *Theory & Event* 14, no. 2 (2011). Ignatov's essay argues that encounters with certain modern art works have the potential to interrupt anthropocentric habits of perception and thereby to engender a stronger sense of nonhuman agencies and vitalities. My thinking on these issues is indebted to his work.
 29. *Ibid.*
 30. *The Will to Power*, ed. Walter Kaufmann, trans. Walter Kaufmann and R. J. Hollingdale (New York: Random House, 1967), 272 (original emphasis).
 31. Nina Martyris, "Lord Byron's Darkest Summer," *Lapham's Quarterly Roundtable*, April 28, 2016, <http://laphamsquarterly.org/roundtable/lord-byrons-darkest-summer>. Also see Gillen D'Arcy Wood, *Tambora: The Eruption that Changed the World* (Princeton and Oxford: Princeton University Press, 2014).
 32. On the year without a summer see Wood, *Tambora*. Many in Europe, unaware that this strange weather was linked to a volcanic eruption, interpreted it through the lens of a widely disseminated report known as the "Bologna prophecy," which predicted the sun's extinction on July 18, 1816. See Jeffrey

- Vail, "'The Bright Sun Was Extinguish'd': The Bologna Prophecy and Byron's 'Darkness,'" *The Wordsworth Circle* 28, no. 3 (Summer 1997): 183–92.
33. Martyris, "Lord Byron's Darkest Summer."
 34. Mary Shelley, residing just next door to Byron on Lake Geneva, also composed *Frankenstein* amid the fallout from Tambora. See Vail, "'The Bright Sun.'" George Gordon (Lord Byron), "Darkness," in *Byron: Selected Poetry and Prose*, ed. Donald A. Low (London and New York: Routledge, 2013), 21–24. "Darkness" can be accessed online at www.poetryfoundation.org/poems/43825/darkness-56d222aeeee1b. In his letter to Voltaire following the 1755 Lisbon Earthquake, Rousseau attempts to protect faith in divine benevolence by stripping "natural" or "physical" evils of their moral significance. See "Letter from J. J. Rousseau to M. de Voltaire," in *Rousseau: The Discourses and Other Early Political Writings*, trans. Victor Gourevitch (Cambridge: Cambridge University Press, 1997), 232–46.
 35. Byron, "Darkness." I have slightly abridged the first stanza.
 36. If this strikes some readers as an unorthodox reading of "Darkness," this is perhaps because the poem had been interpreted for many decades within the confines of a "culture" understood to be opposed to "nature." As Jonathan Bate remarks, "Editors have a tendency to explain literary works with respect to other literary works" alone. As a "cultural phenomenon," Bate continues, readers did not think that even a poem entitled "Darkness" might be "explained in terms of nature." See "Living with the Weather," *Studies in Romanticism* 35, no. 3 (1996): 431–47, at 434. I am grateful to Kam Shapiro for encouraging me to situate my reading in relation to these historical interpretations. I also thank participants at the "Wild Romanticism" conference in Tromsø, Norway, where an earlier version of this essay was presented, for their helpful questions and suggestions.
 37. Byron, "Darkness."
 38. "On Some of the Mental Effects of the Earthquake," in *William James: Writings 1902-1910* (New York: The Library of America, 1987), 1215–22, at 1215. I thank Dana Luciano for reminding me of the pertinence of this letter to my essay.
 39. *Ibid.*, 1218.
 40. *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013), 1. I thank an anonymous reviewer for encouraging me to engage with Morton on this issue.
 41. One aim of my essay, in contrast, is to explore how micropolitical practices of attunement to visceral experiences of climatic change may allow us to become better acquainted with these climate processes even as we cannot "know" them, strictly speaking. Richardson, "Climate Trauma," 2–3.
 42. Henri Bergson's work on memory is pertinent here.
 43. Although Morton occasionally notes that hyperobjects can invade and inhabit our being in this or that way, I share Richardson's sense that "it is not clear in his [Morton's] writing what is actually going on in the felt force of global

- warming, its strange movements, circulations, and manifestations, and the varying intensities with which it touches bodies.” Richardson, “Climate Trauma,” 3.
44. The “eco” in eco-poiesis includes social as well as nonhuman forces. Inspired by Gregory Bateson, eco in this sense does not place nature and culture in opposition to one another, nor does it collapse the distinction between the two. Rather, it acknowledges nature and culture to be ambiguously and differentially entangled. See *Steps to an Ecology of Mind* (Chicago and London: The University of Chicago Press, 2000). Eco-poiesis as I develop it here can be understood as a complement to Michael Warner’s idea of poesis insofar as I propose world-building to be a more-than-human process and publics to be human-nonhuman assemblages. See Warner, *Publics and Counterpublics* (Brooklyn: Zone Books, 2002). I am grateful to an anonymous reviewer for suggesting that I consider the relevance of Warner’s poesis for this essay.
 45. *The Transmission of Affect* (Ithaca, NY and London: Cornell University Press, 2004), 6.
 46. *Ibid.*, 10.
 47. *Ibid.*, 9.
 48. *Ibid.*, 10.
 49. Thomas Cronin, “Seeing without Eyes: The Unexpected World of Nonvisual Perception,” *Conversation*, August 9, 2017, theconversation.com/seeing-without-eyes-the-unexpected-world-of-nonvisual-photoreception-79166. I discuss this idea in the context of public/private distinctions in “What Is It Like to Become a Bat? Heterogeneities in an Age of Extinction,” *Environmental Humanities* 10, no. 1 (2018): 129–49.
 50. See J. Valentin, et al., “The Dynamic Response of Prone-to-Fall Columns to Ambient Vibrations: Comparison between Measurements and Numerical Modelling,” *Geophysical Journal International* 208, no. 2 (2017): 1058–76.
 51. See, for example, Hiroyuki Murakami, Gabriel A. Vecchi, and Seth Underwood, “Increasing Frequency of Extremely Severe Cyclonic Storms over the Arabian Sea,” *Nature Climate Change* 7 (December 2017): 885–89.
 52. Mark Collier, “Pacific Trade Wind Intensifier,” *Nature Climate Change* 6 (August 2016): 743–44, at 743; Met Office, “Quasi-Biennial Oscillation,” September 7, 2016, <http://www.metoffice.gov.uk/learning/quasi-biennial-oscillation>. Scott Osprey, et al., “An Unexpected Disruption of the Atmospheric Quasi-Biennial Oscillation,” *Science* 353, no. 6306 (2016): 1424.
 53. Jonathan Watts, “In an Era of Dire Climate Records the US and South Asia Floods Won’t Be the Last,” *The Guardian*, August 31, 2017, <https://www.theguardian.com/us-news/2017/aug/30/in-an-era-of-unwelcome-climate-records-hurricane-harvey-wont-be-the-last>; “As the Arctic Heats Up, Summer Weather Is Lingerin’ in Place,” *Yale Environment 360*, August 20, 2018, <https://e360.yale.edu/digest/as-the-arctic-heats-up-summer-weather-is-getting-stuck-in-place>.
 54. Katie M. Keranen and Matthew Weingarten, “Induced Seismicity,” *Annual Review of Earth and Planetary Sciences* 46 (2018): 149–74.
 55. Nell Greenfieldboyce, “Study Reveals What Happens During a ‘Glacial Earthquake,’” *NPR*, June 25, 2015, <http://www.npr.org/sections/thetwo-way/>

- 2015/06/25/417457888/study-reveals-what-happens-during-a-glacial-earthquake.
56. Chris Mooney, "Giant Earthquakes Are Shaking Greenland—and Scientists Just Figured Out the Disturbing Reason Why," *The Washington Post*, June 25, 2015, <https://www.washingtonpost.com/news/energy-environment/wp/2015/06/25/giant-earthquakes-are-shaking-greenland-and-scientists-just-figured-out-the-disturbing-reason-why/>.
 57. USGS, "The Science of Earthquakes."
 58. Greenfieldboyce, "Study Reveals What Happens."
 59. Marianne Lavelle, "Long-Overlooked 'Ice Quakes' Data Provides Insights into Calving Glaciers," *Scientific American*, May 2, 2014, <https://www.scientificamerican.com/article/long-overlooked-ice-quakes-data-provides-insights-into-calving-glaciers>.
 60. Mooney, "Giant Earthquakes."
 61. Ibid.
 62. Friedrich Nietzsche, *The Gay Science: With a Prelude in Rhymes and an Appendix of Songs*, trans. Walter Kaufmann (New York: Vintage Books, 1974), 251.
 63. Aelian, *On Animals, Vol. II: Books 6-11*, trans. A. F. Scholfield, Loeb Classical Library 448 (Cambridge, MA: Harvard University Press, 1959), 387. Also see Helmut Tributsch, *When the Snakes Awake: Animals and Earthquake Prediction*, trans. Paul Langner (Cambridge, MA and London: The MIT Press, 1982).
 64. John Hopewell and Angela Fritz, "Caught on Radar: Thousands of Birds Took Flight Minutes before Oklahoma Earthquake," *The Washington Post* Capital Weather Gang, September 6, 2016, https://www.washingtonpost.com/news/capital-weather-gang/wp/2016/09/06/caught-on-radar-thousands-of-birds-took-flight-minutes-before-an-okla-earthquake/?utm_term=.b9eac3f16226. Thanks to Bill Connolly for this reference.
 65. Joel Achenbach, "Zoo Mystery: How Did Apes and Birds Know Quake Was Coming?," *The Washington Post*, August 24, 2011, https://www.washingtonpost.com/national/health-science/zoo-mystery-how-did-apes-and-birds-know-quake-was-coming/2011/08/24/gIQAZrXQcJ_story.html?utm_term=.729a54af4661.
 66. Recording #2 from Karl V. Steinbrugge, "A Catalog of Earthquake Related Sounds," *Bulletin of the Seismological Society of America* 64, no. 5 (1974): 1409–17. Steinbrugge, the archivist who secured and organized this catalog of recordings, offers this comment on Recording #2: "Approximately 700 students were in the auditorium of Sequoia High School when the earthquake struck. Although the quality of the recording is excellent, no sounds other than the audience's reactions appear to be present. Careful listening will reveal that at least one person voiced alarm 3 seconds before the rest of the audience also reacted. The significance of this recording, however, is in the potential for panic from this mild shaking which did not damage the building." For the purposes of this essay, the significance is (also) in the staggered response times. Recordings can be accessed online at www.seismosoc.org/publications/Earthquake_Sounds.

67. Nietzsche, *Gay Science*, 251 (emphasis added). Walter Kaufmann notes Nietzsche's own psycho-physical sensitivities to sudden atmospheric changes, as disclosed by Nietzsche in a letter to Franz Overbeck. See *Gay Science*_251n42.
68. *Ibid.* (original emphasis).
69. "presentiment, n.," *OED Online*, June 2017, Oxford University Press, accessed July 18, 2017, <http://www.oed.com/view/Entry/150705?redirectedFrom=presentiment>.
70. Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC and London: Duke University Press, 2016), 100.
71. "A Very Grim Forecast," *The New York Review of Books* (November 22, 2018), <https://www.nybooks.com/articles/2018/11/22/global-warming-very-grim-forecast>. See also "Global Warming of 1.5°C: An IPCC Special Report," www.ipcc.ch.
72. *Ibid.*
73. *Ibid.*
74. *Ibid.* Perhaps understandably, appeals to survival and urgency in the context of climate change are sometimes received as technocratic or as being in the service of politics of "mere life." Like Maxwell, however, I resist the nature-culture dualism presupposed by notions of "mere" life. Life *is* more life in its seemingly infinite varieties and variations. At least that is how life seems to me. So while it is true that experiences of urgency can promote acquiescence to top-down modes of climate action, I believe such experiences can also enliven otherwise abstract senses of obligation to others. Low-lying island nations are and have been calling for much greater urgency from over-industrialized countries such as the United States. A rallying cry of "1.5 to Stay Alive" dramatizes this need for urgency on the part of (some of) those whose political and economic institutions fuel planetary warming the most. These are not calls for a politics of mere life. In the words of Tony de Brum, former foreign minister of the Marshall Islands: "To move people from their islands...[i]t's a serious, traumatic, heart-wrenching separation of a man from his soul." Quoted in Ari Shapiro, "For The Marshall Islands, The Climate Goal Is '1.5 To Stay Alive,'" *NPR*, December 9, 2015, <https://www.npr.org/sections/parallels/2015/12/09/459053208/for-the-marshall-islands-the-climate-goal-is-1-5-to-stay-alive>. Also see Sheila Watt-Cloutier, *The Right to Be Cold: One Woman's Story of Protecting Her Culture, the Arctic and the Whole Planet* (Minneapolis and London: University of Minnesota Press, 2018).
75. McKibben, "A Very Grim Forecast."
76. *The Will to Power*, 272.
77. *On Revolution* (New York: Penguin Books, 2006), 58.
78. *The Will to Power*, 272.
79. *The Human Condition*, 2nd ed. (London and Chicago: The University of Chicago Press, 1998), 37.
80. See *The Concept of Nature* (Cambridge: Cambridge University Press, 1920).
81. *Science and the Modern World: Lowell Lectures, 1925* (New York: The Free Press, 1967), 76. The higher animals would appear not to belong to this elevated

- domain for Arendt, though.
82. Ibid.
 83. My use of dualism follows Val Plumwood, *Feminism and the Mastery of Nature* (London and New York: Routledge, 1993).
 84. Panagia, *The Political Life of Sensation*, 2, 3.
 85. Translation has an irreducible element of creativity as I understand it.
 86. Right-leaning survivalisms are perhaps one example, though resentments ignited by heightened attunement might also serve to intensify denialisms of various sorts.
 87. *Vibrant Matter: A Political Ecology of Things* (Durham, NC and London: Duke University Press, 2010), xii.
 88. “A Transversal Lineage: Perceptual Abstraction from Eleh to Op Art,” *The Senses and Society* 9, no. 1 (2014): 16–32, at 16, 17, 23.
 89. Ibid., 27.
 90. Ibid., 19.
 91. Steve Goodman, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (Cambridge, MA and London: The MIT Press, 2010), 77.
 92. Nadja Sayej, “The World’s First Cyborg Artist Can Detect Earthquakes with Her Arm,” *Vice Motherboard*, November 26, 2016, https://motherboard.vice.com/en_us/article/8q8e4a/the-worlds-first-cyborg-artist-can-detect-earthquakes-with-her-arm. (Ribas has since transplanted the sensors to her feet.) I thank Michal Grover-Friedlander for alerting me to Ribas’s work.
 93. Ibid.
 94. CNN Staff, “Moon Ribas: The Cyborg Dancer Who Can Detect Earthquakes,” *CNN Style*, October 23, 2018, <https://www.cnn.com/style/article/moon-ribas-cyborg-smart-creativity/index.html>.
 95. Ibid.
 96. Boon Chan, “Artist Moon Ribas Translates Earth’s Movement into Art,” *The Straits Times*, October 2, 2017, <https://www.straitstimes.com/lifestyle/arts/walking-earthquake-detector>.
 97. “On Long-Wave Synthesis,” in *The Geologic Imagination*, eds. Lucas van der Velden, Mirna Belina, Arie Altena (Amsterdam: Sonic Acts Press, 2015), 179–98, at 183. I am grateful to Jane Bennett for this reference.
 98. Ibid., 181.
 99. Blackwood Gallery, “Upcoming Project,” accessed November 1, 2018, <http://blackwoodgallery.ca/exhibitions/2018/WorkofWind.html>.
 100. *The Work of Wind: Air, Land, Sea*, vol. 1, eds. Christine Shaw and Etienne Turpin (Berlin: K. Verlag, 2018), v.
 101. Blackwood Gallery, “Upcoming Project.”
 102. Kate Rigby describes eco-poetics as “the reading and writing of (mainly) literary works” from an ecological perspective. “Eco-poetics,” in *Keywords for Environmental Studies*, ed. Joni Adamson (New York: New York University Press, 2016), 79–81, at 79.
 103. *Eco-poetics: Essays in the Field*, eds. Angela Hume and Gillian Osborne (Iowa City: University of Iowa Press, 2018), 6.

104. "Writing with the Salamander: An Eco-poetic Community Performance Project," *Ecopoetics: Essays in the Field*, 118–42, at 139.
105. David Perkins, "Sympathy with Nature: Our Romantic Dilemma," *Harvard Review* 9 (1995): 69–82, at 69.
106. Kathy Jetñil-Kijiner, "Two Degrees," *Iep Jältok: Poems from a Marshallese Daughter* (Tucson: The University of Arizona Press, 2017), 76–79.

Author Biography

Stephanie Erev is a doctoral candidate in political science at Johns Hopkins University. Her dissertation is entitled "Earthy Considerations: A Theory of Geopolitics." Erev's recent publications include "What Is It Like to Become a Bat? Heterogeneities in an Age of Extinction" and "Belonging to Spontaneous Order: Hayek, Pluralism, Democracy."