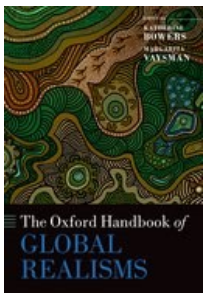

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CHAPTER

41 Preposterous Realism and Posthuman Aesthetics

Christoph Cox

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Abstract

Recent theoretical discourses and artistic practices have sought to decenter the human subject, exploring the ontology and creative capacities of the nonhuman. Prominent among these are theoretical and artistic projects often gathered under the banner of "new materialism." In their explorations of the nonhuman, however, neo-materialist projects are often implicitly humanist, conceiving all of nature in the image of the thinking, sensing, and acting human subject. In this essay, the author examines this neo-humanism (or "subjectalism") within the context of earlier debates about humanism and antihumanism and considers what a genuinely posthumanist materialism might look (and sound) like. Such a materialism must be grounded in an ontological realism attentive to the world before and after the existence of humans. The author suggests that much of the history of sound art can be construed as the exploration of a natural flux that precedes and exceeds the human. Drawing from photography and phonography, the chapter considers the nonhuman operations that register or capture these natural flows. Throughout, the author argues that materialism must, as Friedrich Nietzsche put it, "translate humanity back into nature" rather than humanize or vitalize matter.

Keywords: posthumanism, aesthetics, humanism, antihumanism, materialism, realism, global realism

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In a 2005 exhibition at the Japan Society in New York City, the celebrated conceptual photographer Hiroshi Sugimoto presented five of his own photographs alongside an assortment of three-dimensional artifacts he had collected over the years: an ancient clay charm; a warrior mask from the Kamakura period; a twelfth-century Shinto deity; a prehistoric stone phallus; and other paintings, sculptures, and textiles.[1] Some of these artifacts date from as far back as 10,000 BCE, but all were crafted by human hands. However, Sugimoto also exhibited another set of objects from his collection: fossils of trilobites, ammonites, and other extinct plant and

animal species. Among them, for example, was a fossil featuring an assortment of crinoids dating back 340 million years—about 338 million years before the emergence of the first proto-humans (*Homo habilis*).

The human-made artifacts in Sugimoto's collection register the struggle between decay and preservation, the effort to rescue works of art and craft from the ravages of entropic time. The fossils mark a different relationship to time and have a special importance for Sugimoto, who refers to them as "the oldest form of art." Indeed, for Sugimoto, fossils are a form of "pre-photography." Just as a photograph of an object is the causal index of light reflected or emitted from that object on a light-sensitive surface, a fossil is a physical imprint of a form in geological material. Both the photograph and the fossil freeze a moment in time—or, rather, they provide *traces*, spatial inscriptions that allow us to mark the passage of time.[2] Fossils, then, are what Sugimoto calls "pre-photography time-recording devices."[3]

Earlier in his career, Sugimoto had photographed dioramas reimagining undersea scenes that had been reconstructed from fossil evidence from the Devonian period. Sugimoto's images of these dioramas, then, were photographs of photographs twice removed. They prompted him to see all photography as "a process of
p. 822 making fossils out of the present," thus projecting a future in which photos provide evidence of human ↳ life. Less than a decade after the Japan Society show, Sugimoto embarked on a project to photograph dioramas of North American forests, conceiving them not so much as capturing a time prior to human inhabitation but as visions of the planet after human extinction.[4]

Photography is just a half-century older than phonography or audio recording, another form of indexical registration. Sugimoto's conceptual practice prompts one to ask, might there be phonographic fossils, too? Whatever their mechanical similarities, photography and phonography differ in crucial respects. Not only do they engage different senses; they also have different relationships to time. Photographs fix a temporal instant in an immediately visible image, while audio recordings capture an extended temporal process in a format that requires a machine to decode. Even so, paleontologists have uncovered what they take to be sonic fossils.[5] In 2012, for example, a team of scientists reconstructed the sound of a 165 million–year-old katydid by comparing the wing structure evident in a fossil of a Jurassic insect with that of its living descendent, the modern-day katydid.[6] Similarly, in 2016, paleontologists discovered the fossilized remains of a duck-like creature that lived 66 million years ago, allowing them to imagine (or, rather, auralize) the "soundscape" of the Cretaceous period.[7]

Accurately speaking, however, these examples are less akin to Sugimoto's photo fossils than they are to the dioramas he photographed: reconstructions based on fossil evidence. But a more direct and profound sonic fossil does exist, an indexical trace with a spatial and temporal magnitude far vaster than that of any other fossil in the cosmos. I am referring to the baryon acoustic oscillations evident in the distribution of galaxies in the universe and in temperature fluctuations apparent in the cosmic microwave background. These patterns were fixed around 380,000 years after the Big Bang, so just a little less than 13.8 billion years ago.

What does it mean to say that these visible and spatial features of the universe are acoustic or phonographic fossils?[8] In the early universe, space was filled with a photon–baryon plasma, an intensely hot soup in which photons (or light) were coupled with baryonic (or ordinary) matter. This soup was not fully uniform but instead exhibited slight differences in material density. Each denser region gravitationally drew matter toward it, particularly the much heavier dark matter that was part of the soup in addition to the ordinary, baryonic matter. But, at the same time, scattering photons exerted an outward pressure; and since light and matter were coupled with one another, the baryons were pulled outward as well, resulting in acoustic waves. These pressure waves pushed out in all directions, creating spheres or shells of oscillating matter. As the universe expanded, these oscillating shells grew bigger; but the expanding universe also cooled. Around 380,000 years after the Big Bang, the universe was cool enough for electrons to be captured by nuclei, generating the first atoms and transforming the plasma into a gas. This process also decoupled matter from light and thus halted the acoustic waves. The radii of the shells were thus fixed at the distance at which sound traveled at this point in the history of the universe, what cosmologists call "the sound horizon." This distance is evident in the density patterns of

space—in the distribution of and distance between galaxies. The arrangement and density distribution of
p. 823 galaxies ↳ in the universe, then, constitute a sound fossil, the spatial trace of the most primordial of acoustic processes.[9]

Another such fossil is the cosmic microwave background (which cosmologists also call "relic radiation"). The peaks and troughs in this distribution of electromagnetic radiation are, like the distribution of galaxies, indexical records of the primordial sound of the universe. In 2004, Mark Whittle, an astronomer at the University of Virginia, used this cosmic microwave background (or CMB) to generate an acoustic portrait of the early universe from the Big Bang until "Recombination," when light and matter decoupled and these acoustic fossils were formed. Like any fossil, the CMB is a snapshot of a moment in time, a spatial rather than a temporal distribution. But, using computer models to extrapolate back to earlier moments in the history of the universe, Whittle arrived at a five-second sonic portrait in which the pitch is transposed up fifty octaves. (Whittle projects that, at 380,000 years after the Big Bang, the volume of this cosmic sound would have been tolerable for humans: about 110 decibels—more or less the amplitude of sound at a club or a rock concert).[10]

These photographic and acoustic fossils direct us to a timescale that vastly outstrips that of human existence. To grasp the provocation they propose requires a preposterous realism (a realism of the pre- and post-) that affirms the capacity of human thought to conceive and imagine a world that precedes and exceeds that very thinking. These photographic and acoustic traces also point to a pre-, post-, or more-than-human aesthetics that situates human art-making within the expanded field of natural becoming and *poiesis*. In what follows, I contrast this approach with that of other recent theoretical discourses and artistic practices that have sought to decenter the human subject and consider them within the context of earlier debates about humanism and antihumanism. I argue that much posthumanist thinking and artistic practice today remains persistently humanist and explore what a genuinely posthuman thought and artistic practice might look and sound like.

The Arche-Fossil and the Correlationist Dilemma

The "fossil" has become an important philosophical concept, thanks to the work of philosopher Quentin Meillassoux, whose 2006 book *After Finitude* opens with a discussion of what he terms "arche-fossils" (*archifossile*). The fossils photographed by Sugimoto are *ordinary* fossils, material traces of prehistoric *life*; but baryonic acoustic oscillations and the cosmic microwave background are something different: they are *arche-fossils*, that is, traces of phenomena that predate the emergence of any terrestrial life at all. For Meillassoux, these arche-fossils are philosophically important because they pose a challenge to the theoretical stance that has dominated philosophy, cultural theory, and social theory ever since George Berkeley (1685–1753) and Immanuel Kant (1724–1804)—a stance Meillasoux calls "correlationism."

p. 824 Correlationism is the anti-realist position according to which reality is inextricably correlated with the human subject's mode of apprehending it. The correlationist maintains that we can never escape the bounds of our thinking in order to apprehend the world as it exists independently of that thinking. The world we know, and that we speak and theorize about, is only ever the world-*for-us*. Human being and world are indissociably bound up with one another such that neither term can be conceived independently.

The problem, notes Meillasoux, is that correlationism makes nonsense of the natural sciences, which routinely generate truth claims about the world as it existed prior to the existence of human beings and thus of human thought. The paleontologist maintains that Sugimoto's crinoid fossil dates to 338 million years prior to the emergence of human beings; and the cosmologist claims that, 380,000 years after the Big Bang, matter decoupled from light, halting the acoustic pressure waves that determined the distribution of matter in the early universe.

Such claims confront correlationists with a dilemma. They can assert that such scientific claims do not really describe the world as it existed independently of human beings and human life but rather simply describe the world-*for-us*, a world envisioned by our scientific projects, our technologies, and our conceptions of time and measurement. But this confuses measurement with the thing measured, as though water freezes only if the thermometer and our perception of it say it does. The correlationist explicitly or implicitly maintains that the world as it exists independently of our thought is either *unknowable* or a *retroactive fiction* generated by humans about a prehuman past that is itself a construct of the correlation. Such a claim is, at best, a form of subjective idealism and, at worst, a form of human creationism according to which the universe and its history are generated out of human conceptuality and discourse. The alternative is to grant that the arche-fossil provides evidence of the world prior to and independent of the human–reality correlation, and thus abandon the correlationist stance.

For Meillassoux, the problem of the arche-fossil does not by itself defeat correlationism but rather points the way toward a revitalized realism.[11] The new realism proposed by Meillassoux maintains that thought can think beyond itself; that humans can think a world without humans; and that, in doing so, they can think the material conditions out of which human thought emerged. (Of course, all of this has been taken for granted by natural scientists during precisely the period in which correlationism gained strength among philosophers, anthropologists, and cultural theorists.) Against the idealism and humanism implicit in correlationism, this new realism affirms both materialism and antihumanism.

To be a materialist, Meillassoux points out, is to endorse two principles: (1) being is not thought; (2) thought can think being.[12] The first principle asserts the asymmetry between thought and being. The correlationist insists that the relationship between thought and being is symmetrical, each determining the other. By contrast, the speculative materialist (Meillassoux's self-description) maintains that, while thought depends on matter, matter does not depend on thought, language, or conceptualization—in short, that life and thought are
p. 825 latecomers in the history of the universe, products of ↳ contingent material processes that vastly precede them.[13] The second principle asserts that *thinking can grasp this asymmetry*, can grasp the world as it existed prior to and/or independently of human being and thought, and the material processes out of which such thought emerged.

This realism is antihumanist insofar as it refuses to grant human conceptuality or discourse a determining role in the nature of things beyond the rather narrow bounds of human life and sociality. It points out the profound anthropocentrism involved in correlationism, which insists that human beings can only ever grasp the world as it is for humans. Instead, this speculative materialism maintains that human thought is capable of thinking beyond the human, opening out to the prehuman, the nonhuman, and the posthuman.

A Brief History of Antihumanism

To explore this idea a bit further, I would like to take a brief detour through European intellectual history since the mid-twentieth century in order to foreground the persistence of humanism in contemporary theoretical discourse. I will paint in broad strokes, highlighting some key moves while surely losing some nuance in the process. Hopefully, however, this brief history will shed light on current philosophical and aesthetic debates and allow us to envision an alternative to contemporary forms of humanism.

The assertion that correlationism is implicitly humanist and anthropocentric may strike some as odd. After all, contemporary correlationism owes a great deal to structuralism and poststructuralism, which emerged in the intellectual milieu of 1960s France and explicitly declared itself to be antihumanist. In *The Savage Mind* (Le pensée sauvage, 1962), for example, anthropologist Claude Lévi-Strauss (1908–2009) boldly asserted, "I believe that the final goal of the human sciences is not to constitute man, but to dissolve him."[14] Likewise, the Marxist philosopher Louis Althusser (1918–1990) declared humanism to be an ideological concept, insisting that a

rigorous analysis of capitalism and class domination requires what he called "theoretical antihumanism."[15] In *The Order of Things* (Les mots et les choses, 1966), French philosopher Michel Foucault (1926–1984) argued that "man is an invention of recent date. And one perhaps nearing its end."[16] And, in essays such as "The Ends of Man," philosopher Jacques Derrida (1930–2004) sought to decenter the human subject and to deconstruct the notions of essence, consciousness, intentionality, and other features central to philosophical humanism.[17]

Structuralist and poststructuralist antihumanism were predominantly directed at the previous generation of existentialist philosophers, particularly Jean-Paul Sartre (1905–1980), who, in a famous lecture in 1945, summarized his position with the title "Existentialism Is a Humanism" (L'existentialisme est un humanisme). Sartre's phenomenological ontology is premised on the distinction between two kinds of being: being-*in*-itself (*être-en-soi*) and being-*for*-itself (*être-pour-soi*). This division is akin to Kant's distinction between the
p. 826 domains of nature and freedom and, is similarly motivated by ↳ ethical concerns. Being-in-itself is the being of *objects* or *things*. It is passive, inert, and deterministic; and it forms a *plenum*—that is, it has *essential* characteristics and forms a causal chain for which there is no outside. By contrast, being-for-itself is the being of *subjects*, of conscious *human beings*. A human being is not a *thing*. Rather, human beings are conscious moral agents and demand to be treated by other such agents as something other than a thing. A human being has no *essence* or pre-given nature but rather constantly surpasses or transcends itself, choosing who it will be through its free, conscious acts. For this reason, being-for-itself is not a plenum but a nothingness or no-thing-ness.

Sartre thus envisions the world according to the classic dichotomies between object and subject, determinism and freedom, the nonhuman and the human. Existentialism is a humanism, then, in the sense that it is centered on humans as beings who are fundamentally different from the rest of being. Human beings, Sartre writes, realize themselves by always projecting beyond themselves in pursuit of transcendent goals. And they grasp objects only in relation to such transcendence. Thus, Sartre concludes, "The only universe that exists is the human one—the universe of human subjectivity."[18]

Sartre took himself to be following German philosopher Martin Heidegger (1889–1976), who, in his early philosophy, distinguished being from beings, and human being (*Dasein*) from other sorts of beings. Only a human being, Heidegger argued, considers *what it means to be* and chooses its life based on its understanding of being. As Heidegger puts it, "Da-sein is a being that does not simply occur among other beings. Rather it is ontically distinguished by the fact that, in its being, this being is concerned *about* its very being."[19] Yet in a text written immediately following the publication of Sartre's "Existentialism Is a Humanism," Heidegger rejected Sartre's interpretation of his philosophy. "Every humanism remains metaphysical," wrote Heidegger (the term "metaphysical" denoting, for Heidegger, a forgetting or misunderstanding of the nature of being).[20] For many readers of Heidegger, the "Letter on Humanism" marks the beginning of a turn in his thinking, a turn away from the priority of human being (*Dasein*) toward being itself and toward language, which he famously (and repeatedly in the "Letter") calls "the house of being." "Language is the house of being," Heidegger writes. "In its home human beings dwell. Those who think and create with words are the guardians of this home.... What is essential is not the human being but being."[21] For Heidegger, then, Sartre's existentialism is too bound up with *human* being and thus fails to inquire about being itself and its disclosure by language.

This Heideggerian antihumanism had a profound influence on poststructuralist thinkers such as Derrida and Foucault, in whose work we see precisely this critique of "man" and "humanism" in favor of language, discourse, and writing. In the concluding pages of *The Order of Things*, Foucault writes "man is in the process of perishing as the being of language continues to shine ever brighter on our horizon.... Since man was constituted when language was doomed to dispersion, will he not be dispersed when language regains its unity?"[22] Likewise, in one of the inaugural essays of poststructuralism, Derrida argued that, at "the moment when language invaded the universal problematic, the moment when, in the absence of a center or origin, everything became discourse," we "pass beyond man and humanism," the term "man" designating for Derrida

p. 827 that being who has always longed for a center and origin, a transcendental ↳ signified that escapes or arrests the play of differences characteristic of language and writing.[23]

Structuralist and poststructuralist antihumanism engaged in a sustained critique of human voluntarism and consciousness, the notion that, in their knowing and acting, human beings are fully present to themselves. Rejecting this view, these antihumanists drew attention to the generally unconscious linguistic, conceptual, social, and political systems and structures that constrain human knowledge and action: the symbolic order, ideology, the episteme, writing, *différance*, power, and so on.

These analyses were enormously powerful and revealing. Yet, despite their avowed antihumanism, structuralism and poststructuralism remained within the orbit of the human—that is, within the orbit of language, discourse, textuality, semiosis, and sociality. They had almost nothing to say about the rest of the natural world, animate or inanimate—except to compare it, in passing, with the human and to find it lacking or insignificant. Any inquiry into biology, let alone chemistry, physics, or geology, was deemed positivistic, merely empirical or ontic—unless such an inquiry concerned an examination of those sciences as *discourses*.

An exception, of course, is Derrida, who, over the course of his career, carried out a sustained (if sporadic) deconstruction of the oppositions between human/animal and human/machine. These themes came to the fore in one of Derrida's final books, *The Animal That Therefore I Am* (L'Animal que donc je suis, 2006), in which the philosopher not only makes a foray across the human/animal divide but also criticizes postwar European intellectuals precisely as I have been doing: for their dismissal of the nonhuman world on the grounds that it has no access to language, the symbolic, and the unconscious.[24] And yet, even in this text, it is not clear that we ever get beyond the human. The animal (in this case a domestic cat) *regards* Derrida and, conversely, appears to him as a fellow creature toward which we have an ethical *responsibility*. But that obligation appears to Derrida simultaneously in the form of a *likeness* (like another human being, this creature solicits him) and in the form of an *alterity* (this creature is nonetheless impenetrably other). As theorist Donna Haraway points out, Derrida never gets to that other side, "he never asks what the animal might actually be doing, feeling, thinking or perhaps making available to him in looking back at him that morning … he missed a possible invitation, a possible introduction to other-worlding."[25] Moreover, this ethical responsibility would seem to extend not to nonhuman animals in general but only to what conservation biologists call "charismatic megafauna," those large-scale creatures susceptible to anthropomorphization—cats, bears, and whales but not bats, cockroaches, or dust mites.

Materialism and Subjectalism

Derrida's final book became one of the inaugural texts in "animal studies," which, following the trajectory of Haraway's work, shifted the critique of humanism beyond *anti*humanism toward *post*humanism. In many of
p. 828 their variants, animal studies and ↳ posthumanism challenged the humanist contention that human beings are unique by virtue of some special endowment or capacity—for example, self-consciousness, rationality, or agency—that sets them apart from other entities. Instead, these discourses sought closer ontological and ethical connections between humans, animals, and machines.

This line of thought was pushed further by another group of thinkers who, in the late 1990s and early 2000s, assembled under the banner of "new materialism." Acknowledging the latent humanism involved in theoretical programs focused on language and discourse, new materialist thinkers directly challenged the "linguistic turn" of previous generations and instead initiated a new turn—toward matter and materiality. Thus, feminist theorist Karen Barad began an influential essay with the following claim:

> Language has been granted too much power. The linguistic turn, the semiotic turn, the interpretative turn, the cultural turn: it seems that, at every turn lately, every "thing"—even materiality—is turned

> into a matter of language or some other form of cultural representation.... There is an important sense in which the only thing that does not seem to matter anymore is matter.[26]

Objecting to such efforts to render the material world a discursive construction, Barad went on to maintain that

> matter is not a support, location, referent, or source of sustainability for discourse. Matter is not immutable or passive. It does not require the mark of an external force like culture or history to complete it.... *Matter is substance in its intra-active becoming—not a thing but a doing, a congealing of agency*.[27]

This last remark is important and characteristic of much new materialist thought. For humanists such as Sartre, agency—the capacity to choose and consciously to act on those choices—is what distinguishes human beings from all other entities. Structuralism and poststructuralism challenged this claim, revealing the dispersion of agency across an array of unconscious structures and social systems. Animal theorists and posthumanists went a step further, attributing agency to nonhuman animals and perhaps even to machines. Barad and the new materialists go further still, extending agency to the entirety of the material world.

This claim is also central to the work of scholars such as Bruno Latour and Jane Bennett. Once considered precisely the sort of social constructionist criticized by materialists and realists, Latour has re-emerged as an important ally of "new materialists" such as Barad and Bennett (and of object-oriented ontologists such as Graham Harman). Latour has little to say about matter but an enormous amount to say about objects of all sorts regardless of their material or ontological status—speed bumps, peptides, door keys, gold, quarks, cameras, and many other things. For Latour, each of these entities possesses agency in the sense that it is "something that acts or to which activity is granted by others." Since the term "actor" suggests human agency, Latour
p. 829 prefers ↳ the semiotic term "actant." Thus, he writes, "an actant can literally be anything provided it is granted to be the source of an action."[28]

Inspired by Latour, Jane Bennett has developed what she calls a "vibrant" or "vital materialism," which explores "the vitality of matter and the lively powers of material transformations." "By 'vitality,' " she explains, "I mean the capacity of things—edibles, commodities, storms, metals—not only to impede or block the will of humans but also to act as quasi agents or forces with trajectories, propensities, or tendencies of their own."[29] This conception of "vibrant matter," she affirms, "stretches received concepts of agency, action, and freedom sometimes to the breaking point" and "dissipate[s] the onto-theological binaries of life/matter, human/animal, will/determination, and organic/inorganic."[30] "In this onto-tale," she concludes, "everything is, in a sense, alive."[31] Barad concurs, celebrating "the world's radical aliveness," a "new sense of aliveness" that "applies to the inanimate as well as the animate."[32] Likewise, philosophers Gilles Deleuze (1925–1995) and Félix Guattari (1930–1992), who have inspired so much neo-materialist thought, speak of "a life proper to matter, a vital state of matter as such, a material vitalism"; and following them, philosopher Manuel DeLanda describes the operations of what he calls "nonorganic life."[33]

Alongside object-oriented ontology, new materialism has become a prominent discourse in and resource for contemporary art, giving artists, curators, and art theorists new ways to think about objects, materials, and art works, and the relationship of human beings to them. In a museum or gallery today one might encounter a refrigerated chamber displaying blooms of bacteria; pads of ferromagnetic liquid animated by magnets and fans; sculptures made of mastic gum that slowly oozes and droops due to gravity and temperature changes; paintings bearing the physical, chemical, and biological traces of their underground burial, submersion in river water, or subjection to extreme temperatures; sculptures built by termites or powered by the kinetic energy of gallery visitors; or live computer-generated simulations portraying complex ecosystems populated by humanoid creatures and protean entities that are indeterminately animal, vegetable, and mineral.

New materialist artistic practices of this sort, and the theoretical discourse that often directly or indirectly inspires them, have become so pervasive in the art world today that cultural theorist Suhail Malik has deemed them "hegemonic."[34] However prominent, this new materialist discourse is hampered by a philosophical problem. New materialism claimed to challenge humanism and anthropocentrism, boldly pressing beyond the human to explore the nonhuman (whether it be the animal, the vegetable, or matter more generally). It also implicitly challenges correlationism, rejecting the linguistic turn, and, instead, claims knowledge and understanding of a nonhuman world. Yet, in all this, we still find a residual humanism. New materialism tends to render all of matter in the image of the human, endowing it with life, sensation, agency, and expressiveness. It is as though the only way to approach, legitimize, or value the nonhuman is to anthropomorphize it, to endow it with human traits and capacities. Instead of critiquing and surpassing humanism, then, we find a massive expansion of it.

p. 830 Sartre drew a sharp boundary between the human and the nonhuman, celebrating the former for its ontological uniqueness and special capacities. New materialism dissolves that boundary but does so by conceiving all of nature in the image of the human. Correlationism asserted the inability of human thought to think outside itself. New materialism solves this problem by humanizing that very outside; if everything is akin to the human, then everything can be thought. This is the position that Meillassoux calls "subjectalism," the metaphysical position that consists in the projection of human subjectivity onto every material entity or force.[35]

Truly challenging humanism (and the divide between the human and the nonhuman) requires a different mode of thought. Instead of rendering nature and matter human, we need "to translate humanity back into nature," as philosopher Friedrich Nietzsche (1844–1900) put it—not to see human capacities and traits everywhere in nature but rather to naturalize human reason, mind, agency, and expression, conceiving them as variants of processes discernible in the rest of the natural world.[36] For Nietzsche, humanism is theology in disguise. Where, according to the theological story, human beings were created in the image of God, correlationism and subjectalism create the world in the image of the human. God might be dead, Nietzsche wrote, but the "shadows of God" remain. Humanism is one of those shadows, as are vitalism, organicism, and subjectalism more broadly. "Let us beware of thinking that the world is a living being," Nietzsche warns us. "We have some notion of the nature of the organic; and we should not reinterpret the exceedingly derivative, late, rare, accidental, that we perceive only on the crust of the earth and make of it something essential, universal, and eternal."[37]

Meillassoux's critique of subjectalism is sharp and persuasive. Yet his alternative is deeply problematic. Opposing subjectalism, a monistic position that sees human subjectivity everywhere in the world and conceives all differences as differences of *degree*, not of *kind*,[38] Meillassoux argues that we must reinstate dualism, construing the difference between the organic and the inorganic as a radical difference in *kind* or *nature* rather than a difference in *degree*. "What we need are dualisms everywhere," writes Meillassoux; and he notes that this includes "the dualism of soul and body."[39] For Meillassoux, the only way to counter subjectalism is to reinstate a radical discontinuity between the inorganic and the organic, between death and life, such that the living can arise out of the non-living only via a sort of miracle, a creation ex nihilo.[40]

But this is to fall, once again, into theology—a *creationist* theology that ignores the alternatives offered by empirical science.[41] Contrary to Meillassoux, evolutionary biology demonstrates that there was no single or miraculous event that generated life from non-life, the organic from the inorganic. Rather, the distinction emerged very slowly and gradually, through a blind, mechanical process that generated an almost indiscernible transition between what, in retrospect, we refer to as the properties of living and nonliving beings. As philosopher Daniel Dennett puts it, "an impersonal, unreflective, robotic, mindless little scrap of molecular machinery is the ultimate basis of all the agency, and hence meaning, and hence consciousness, in the universe."[42] Or as Nietzsche puts it at the end of his critique of vitalism and organicism, "Let us beware of
p. 831 saying that death is opposed to life. The living is only a type of what is dead, ↳ and a very rare type."[43]

Nietzsche's claim here is opposed to both Meillassoux's and the vitalist's. Unlike Meillassoux, Nietzsche follows naturalist Charles Darwin (1809–1882) in asserting a continuity between the inorganic and the organic. Yet, where the vitalist affirms this continuity by conceiving all matter as living, Nietzsche does the reverse, asserting that life is a rare and accidental byproduct of mechanical, material processes.

In short, then, the humanist prejudice will not be dispelled by recourse to language or discourse, as the poststructuralists believed, or through the new vitalism or subjectalism evident in much new materialist discourse. Rather, the critique of humanism begun by poststructuralism can only be completed through a naturalism and materialism that considers human beings to be thoroughly and unexceptionally a part of the natural world and for their capacities to be explained as contingent products of natural history.

A Posthuman Aesthetics

What does all this mean for a posthuman aesthetics?

Recall Hiroshi Sugimoto's claim that "fossils … are no doubt the oldest form of art." This is a contentious claim, of course, and he immediately adds the caveat: "I am well aware that they date to a time well before the rise of humanity, which created the concept of art." Without elaborating further, Sugimoto raises the classic correlationist problem: if "art" is a concept created by humans, can there be a pre-, post-, non-, or more-than-human art or aesthetics? This poses a broader question about the relationship between concepts and things. The correlationist insists that concepts determine things or, more mildly, that we cannot subtract conceptuality from our apprehension of things. Thus, Bruno Latour maintains that microbes did not preexist French chemist Louis Pasteur's (1822–1895) discovery of them and that the pharaoh Ramses II could not have died of tuberculosis, which only emerged as a medical concept three thousand years after the ancient Egyptian ruler's death.[44] Of course, some concepts do determine things: the concept of a unicorn, for example, or the concept of a university. Yet, for the most part, this is not the case. The trilobites, ammonites, and crinoids imprinted on Sugimoto's fossils did not come into being when they were named and classified as such by human zoologists. But perhaps the concept of art is more like the concept of a unicorn or a university. Perhaps it is unique to human beings, practices, and institutions, and thus the concept of a pre- or posthuman art is nonsensical.

One way out of this bind is to conceive artistic production and experience not as unique to human beings but as variants of behaviors in the animal world. Contemporary ornithologist Richard Prum's celebrated book *The Evolution of Beauty* (2017) does just this. Offering a theory of "aesthetic evolution," he shows that animals often perform for and select mates on the basis of beauty and aesthetic pleasure, that is, on the basis of qualities that not only cannot be reduced to utility for survival but are sometimes directly in conflict with it. Only "aesthetic evolution," Prum argues, can account for the diversity of ornament found in the biological world. Perhaps the
p. 832 most famous example ↳ of this is the behavior of bower birds, which have captured the imagination of artists such as Germaine Kruip (b. 1970), whose video *Aesthetics as A Way of Survival* (2009) documents the extravagant performance of these creatures. Ultimately, Prum argues for what he calls a "post-human aesthetic philosophy that places us, and our artworlds, in context with other animals."[45]

Sugimoto goes further, suggesting that the concept of art can be extended beyond the biological domain. Proposing that fossils are a form of "pre-photography" and that photographs are "fossils of the present," Sugimoto asks us to consider human technological and aesthetic practices as variants of geological, physical, and chemical processes.

Nietzsche concurs. His first book, *The Birth of Tragedy Out of the Spirit of Music* (Die Geburt der Tragödie aus dem Geiste der Musik, 1872), proposes that ancient Greek art was motivated by two creative impulses named after the gods that inspired them and that they honored. The Apollonian impulse is evident in the visual or plastic arts, which present discrete and enduring spatial objects. The Dionysian impulse is evident in the dynamic

fluidity of music, which models the movement of time in its creation and destruction of audible forms. Yet, for Nietzsche, human artistic production is itself derived from a deeper source of creativity, the generative power of nature itself, which Nietzsche calls "the Ur-artist of the world."[46] The human creation of paintings, sculptures, films, videos, photographs, musical works, sound installations, theatrical productions, and the like are latter-day manifestations of the geological, physical, chemical, and biological forces that generate mesas and emeralds, peonies and peacocks. Again, this vision of the world is in no way vitalistic. To the contrary, where vitalism sees all of nature as endowed with that "exceedingly derivative, late, rare, accidental" phenomenon we call "life," Nietzsche's account construes life, humanity, and human art-making as special cases of the geo-physico-chemical becoming of the world.

This conception of the aesthetic is shared by contemporary artist and theorist Susan Schüppli, whose forensic analysis of the 2010 Deepwater Horizon disaster led her to rethink the relationship between photography and human agency. The explosion of the BP drilling rig sent two hundred million gallons of crude oil into the Gulf of Mexico, creating a thin emulsive layer of naturally photonic hydrocarbon atoms carried by the surface tension of the seawater. This iridescent film was the result of a double mirroring between two layers: air and oil; oil and water. Each of these layers reflects some light while also allowing some light to pass through. This double mirroring creates interferences that either augment or cancel the light from the other layer. Variations in the density of the oil film modulate this reflection and interference, generating protean rainbow-like effects. While helicopters, satellites, and underwater cameras documented the oil spill for news feeds, Schüppli came to see the spill itself as an "image-producing technology." "I'm less interested in a picture of an oil spill and more into the way in which … certain contaminated or polluted environments start to function as *proto-photographic systems*," Schüppli told an interviewer. "The chemistry of these toxic ecologies starts to induce a certain set of alchemical changes that seem analogous to some of the early experiments in photography."[47] Elsewhere she compares the oil spill to "a new form of cinema organized by the found footage of 'nature' itself."[48] Schüppli
p. 833 concludes, "Reconceptualizing ↳ these toxic ecologies as fully realized aesthetic agents demands that we, in turn, revise the ways we apprehend our relationship to the world; that we come to realize the myriad ways in which we are visually and aesthetically continuous with it."[49]

Schüppli's conception of a nonhuman or more-than-human photography is extended by artist-theorists Trevor Paglen and Joanna Zylinska. Paglen argues that digital image-making has fundamentally altered visual culture, marking a break with the history of images that stretched from Chauvet cave painting through analog photography. "Visual culture … has become detached from human eyes and has largely become invisible," Paglen wrote in 2016. "Human visual culture has become a special case of vision, an exception to the rule. The overwhelming majority of images are now made *by* machines *for* other machines, with humans rarely in the loop."[50] What marks this shift is that digital images are fundamentally *machine-readable*. When I take a photo with my iPhone, for example, I create a digital file. This file does not reflect light and is not by itself visible. Photo-viewing software and a liquid crystal display can temporarily translate this file into something my eyes can perceive as an image. But when I turn off my phone, the image reverts back to its invisible, computational form and becomes, for me, simply latent or virtual, like a picture in a closed photobook. Though invisible to my eyes, however, these computational files are fully operational, able to circulate, to be mined and tracked, and to contribute to the generation of data sets, profiles, and training algorithms. Beyond this and unlike the photos on my cell phone or those I upload to Facebook or Instagram, most of the images captured by closed-circuit TV, automatic number plate recognition, webcams, drones, satellites, and other commercial and industrial cameras will never be viewed by human eyes; but they will nonetheless be read by machines as data and contribute to algorithmic policing, commercial analytics, industrial logistics, and the like. Photographs, Paglen concludes, are no longer representations or mediations that have meaning and are subject to semiotic or hermeneutic readings; rather, they have become operations, activations, and enforcements that view us and guide our behavior.[51]

The Sonic Flux

I noted earlier that Nietzsche conceives nature as the Ur-artist of the world and regards its aesthetic production as having two tendencies: the Apollonian tendency toward the generation of relatively stable and enduring forms and the Dionysian tendency toward dissolution, becoming, and relentless change. I noted, too, that Nietzsche associates the Apollonian with the plastic arts and the Dionysian with music. Indeed, like his great predecessor, philosopher Arthur Schopenhauer (1788–1860), Nietzsche grants to music a profound metaphysical significance. Its temporal, evanescent flow and the restless tensions of which it is composed model the dynamic becoming of the world, which DeLanda aptly describes as "a single matter-energy undergoing phase transitions of various kinds, with each new layer of accumulated 'stuff' simply enriching the
p. 834 reservoir of ↳ nonlinear dynamics and nonlinear combinatorics available for the generation of novel structures and processes."[52] These structures and forms are themselves products of the dynamic flux, of which they represent merely a local and temporary slowing down or congealing.[53]

Nietzsche and Schopenhauer are not alone in granting to music a metaphysical significance. This is also a central theme in classical Indian philosophy, where the Vedas and Upanishads assert a fundamental connection between sound and the absolute nature of reality embodied in the syllable *om*.[54] Indeed, one of the principal Upanishads, the Māndūkya, is simply a gloss on its first line, which reads, "*Om*. This syllable is the whole world!"[55] Musical scholars in the Indian tradition later came to distinguish between two types of sound or vibration. *Āhata nāda* is what we call music or "struck sound," the sound produced when a physical object is plucked or bowed. This audible music, however, is premised on a deeper and more universal conception of sound, *anāhata nāda*, or "unstruck sound," the ordinarily inaudible cosmic vibration of the universe. Through meditation and intense contemplation of music, the Indian tradition teaches, one can ascend to a cosmic perspective and gain access to this unstruck sound.

All these philosophical traditions—Greek, Indian, and German—give priority to music, not only among the arts but within ontology in general. In a more modern materialist sense, though, we can consider music and sound as forming one flow among many in the dynamic flux of nature. This dynamic flux of nature consists of different layers or sorts of material, energetic, and informational flows: flows of lava and magma; of genes, bodies, food, viruses, and diseases; of goods, money, words, ideas; of wind, water, oil, electricity, traffic, images, and so on. Among these flows is a properly *sonic* flux: the perennial flow of sound that has been propagated since the early universe and will surely continue long after the disappearance of human beings.[56] Speech and music contribute to this sonic flux, which, however, vastly precedes and exceeds the human. In a brief passage from a 1980 lecture, Deleuze nicely encapsulates this concept of the sonic flux: "One can … conceive of a continuous acoustic flow … that traverses the world and even encompasses silence. A musician is someone who samples [*prélève*] something from this flow."[57]

Five years after Nietzsche published his book on music and the art impulses of nature, American inventor Thomas Edison (1847–1931) introduced a technology that would enable sonic artists to sample this flow directly and mechanically. The phonograph not only enabled its users to capture and preserve the previously fleeting and protean material of sound; it also vastly expanded the scope of sounds available for aesthetic apprehension and appreciation. Where writing and musical notation captured only speech or musical sounds and required a detour through the symbolic, the phonograph captured the sonic real, indiscriminately registering any and all sounds—not words or notes but frequencies.[58] The phonograph also revealed speaking and hearing to be purely mechanical, upsetting the metaphysics that accorded the voice, listening, and human being a spiritual or supernatural existence.

p. 835 The impact of this discovery is evident throughout the history of sonic experimentation in the twentieth and twenty-first centuries: in the noise studies of Luigi Russolo (1885–1947), Edgard Varèse (1883–1965), and Pierre Schaeffer (1910–1995), who discovered a worldly flow of sound beyond music; in John Cage's (1912–1992)

landmark composition *4'33"* (1952), which simply asks listeners to sample the sonic flux for a short period of time; in the "gradual processes" of minimalist composition and the drone installations of La Monte Young (b. 1935), Éliane Radigue (b. 1932), Max Neuhaus (1939–2009), Alvin Lucier (1931–2021), and Maryanne Amacher (1938–2009), whose work modeled the duration, physical flow, and dynamic tension of the sonic flux; in R. Murray Schafer's (1933–2021) notion of the "soundscape" and the practices of field recording it inspired, all of which conceive the world as what Schafer called a vast unfolding sound composition[59]; in the ambient and noise musics that emerged during the 1970s and 1980s; and in the varied practices of prominent contemporary sound artists such as Christina Kubisch (b. 1948), Francisco López (b. 1964), Jacob Kirkegaard (b. 1975), Jana Winderen (b. 1965), and Toshiya Tsunoda (b. 1964).

Just as these artists have sampled and modeled the perennial sonic flux, so too have historians and anthropologists begun to reconstruct the pre-Edisonian soundscape through fossil evidence—not so much the geological evidence presented by fossils of prehistoric katydids and ducks or the cosmological fossils provided by the distribution of galaxies in the universe but the literary, journalistic, and pictorial fossils that register traces of sound and listening in ages past.

Sugimoto called photographs "fossils of the present"; the same is true of every audio recording. This is particularly true of every vinyl record, which is doubly a fossil. Like a photograph, it is an indexical imprint of a past event; but also, as a petroleum byproduct, the vinyl record is itself partially composed of fossils, namely geological deposits of decomposed aquatic microorganisms. The vinyl record, then, presents us with the specter of a prehistoric material bearing the trace of a near-past sonic event that is sent into an indefinite future—a terrestrial version of the Golden Record launched in 1977 aboard the Voyager space probes, which, in the second decade of the twenty-first century, exited our solar system bearing samples of the sonic flux (the sounds of surf, wind, thunder, animals, and humans) directed no longer toward humans but toward a nonhuman, alien audience.

Each of these instances carries us into a deep time before and after the human, a cosmic time that dwarfs the history of humanity and earthly life. And they allow us to conceive a pre-post-erous aesthetics that dislodges human beings as the privileged subjects of artistic production and reception. Against all manifest and latent humanisms that have marked philosophy and cultural theory over the past half-century or so (humanism, antihumanism, correlationism, subjectalism, and the rest), these photographic and phonographic fossils and time capsules encourage us to *naturalize* aesthetics, to fold human artistic production back into the dynamic flux of the natural world and conceive it as but an instance of a flow that is physical, chemical, geological, and cosmological before and after it is living or human.

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Notes

1. Hiroshi Sugimoto, "History of History," Japan Society, September 23, 2005, https://japansociety.org/events/hiroshi-sugimoto-history-of-history.

2. On time and the trace, see Martin Hägglund, "Radical Atheist Materialism," in *The Speculative Turn: Continental Realism and Materialism*, ed. Levi R. Bryant, Nick Srnicek, and Graham Harman (Melbourne: re:press, 2011), 114–29.

3. From a brochure accompanying Sugimoto's Japan Society exhibition. A similar statement can be found on Sugimoto's website, "Pre-Photography Time-Recording Device," https://www.sugimotohiroshi.com/pptrd.

4. On this project, see Randy Kennedy, "'Fossilizing' with a Camera," *New York Times*, October 8, 2012, https://www.nytimes.com/2012/10/09/arts/design/hiroshi-sugimoto-at-the-american-museum-of-natural-history.html?_r=1.

5. I take these two examples from Amelia Barikin, "Sound Fossils and Speaking Stones: Toward a Mineral Ontology of Contemporary Art," in *Animism in Art and Performance*, ed. C. Braddock (London: Palgrave Macmillan, 2017), 253–75.

6. See Brandon Keith, "165-Million Year Old Cricket Song Comes Back to Life," *Wired*, February 6, 2012, https://www.wired.com/2012/02/jurassic-cricket-song/.

7. See Nicola Davis, "Oldest Fossil of a Bird's Voicebox Gives New Hint at Soundscape of the Cretaceous," *The Guardian*, October 12, 2016, https://www.theguardian.com/science/2016/oct/12/oldest-fossil-of-birds-voicebox-gives-new-hint-at-soundscape-of-the-cretaceous-syrinx.

8. My account is drawn from a variety of sources: http://www.astro.ucla.edu/~wright/BAO-cosmology.html; https://www.youtube.com/watch?v=PPpUxoeooZk&vl=en; https://newscenter.lbl.gov/2014/01/08/boss-one-percent/; https://markwhittle.uvacreate.virginia.edu/BBA_web/index_frames.html; and https://markwhittle.uvacreate.virginia.edu/articles/griffith.html.

9. For a helpful animation of this process, see https://www.youtube.com/watch?v=jpXuYc-wzk4.

10. Whittle's research is documented at https://markwhittle.uvacreate.virginia.edu/BBA_web/unit09/unit9.html.

11. Note that, while I follow Meillassoux in diagnosing the problem with correlationism, I do not accept his solution, which I've analyzed and criticized in *Sonic Flux: Sound, Art, and Metaphysics* (Chicago: University of Chicago Press, 2018), 160–69.

12. Quentin Meillasoux, "Iteration, Reiteration, Repetition: A Speculative Analysis of the Sign Devoid of Meaning," in *Genealogies of Speculation: Materialism and Subjectivity since Structuralism*, ed. Armen Avanessian and Suhail Malik (New York: Bloomsbury, 2016), 147.

13. On this, see Hägglund, "Radical Atheist Materialism," 123.

14. Claude Lévi-Strauss, *Wild Thought*, trans. Jeffrey Mehlman and John Leavitt (Chicago: University of Chicago Press, 2021), 281.

15. See Louis Althusser, "Marxism and Humanism," in *For Marx*, trans. Ben Brewster (London: Verso, 2005), 221–47.

16. Michel Foucault, *The Order of Things*, trans. Alan Sheridan (New York: Routledge, 2002), 422.

17. See Jacques Derrida, "The Ends of Man," in *Margins of Philosophy*, trans. Alan Bass (Chicago: University of Chicago Press, 1982), 109–36.

p. 837 18. Jean-Paul Sartre, *Existentialism Is a Humanism*, trans. Carol Macomber (New Haven, CT: Yale University Press, 2007), 52.

19. Martin Heidegger, *Being and Time*, trans. Joan Stambaugh (Albany: State University of New York Press, 1996), 10. Emphasis in the original.

20. See Heidegger, "Letter on 'Humanism,'" in *Pathmarks*, ed. William McNeill, trans. Frank A. Capuzzi (Cambridge: Cambridge University Press, 1998), 245.

21. Heidegger, "Letter," 239, 254.

22. Foucault, *Order of Things*, 421.

23. Jacques Derrida, "Structure, Sign, and Play in the Discourse of the Human Sciences," in *Writing and Difference*, trans. Alan Bass (London: Routledge, 2001), 354, 370.

24. See Jacques Derrida, *The Animal That Therefore I Am*, trans. David Wills (New York: Fordham University Press, 2008), esp. "And Say the Animal Responded?," 122, 127.

25. Donna Haraway, *When Species Meet* (Durham, NC: Duke University Press, 2008), 20. Martin Hägglund and Henry Staten offer heterodox readings of Derrida as a rigorous naturalist whose conceptions of the trace and spacing are equally applicable to the physical sciences. See Hägglund, "Radical Atheist Materialism" and *Radical Atheism: Derrida and the Time of Life* (Stanford, CA: Stanford University Press, 2008) and Henry Staten, "Derrida, Dennett, and the Ethico-Political Project of Naturalism," *Derrida Today* 1 (2008): 19–41. While these extensions of Derrida are intriguing, evidence of this position in Derrida's own writing is very slim.

26. Karen Barad, "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter," *Signs: Journal of*

Women in Culture & Society 28, no. 3 (2003): 801.

27. Barad, "Posthumanist Performativity," 822. Emphasis in the original.

28. Bruno Latour, "On Actor-Network Theory: A Few Clarifications," *Soziale Welt* 47, no. 4 (1996): 373.

29. Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010), vii.

30. Bennett, *Vibrant Matter*, x.

31. Bennett, *Vibrant Matter*, 117.

32. Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007), 33, 177, 235, 437n81, 449n16.

33. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 411. See also Manuel DeLanda, "Nonorganic Life," in *Incorporations*, ed. Jonathan Crary and Sanford Kwinter (New York: Zone, 1992), 129–67. Elsewhere, DeLanda criticizes the "vitalism" and "organic chauvinism" of thinkers such as Bergson but does not sufficiently devitalize Deleuze's thinking. See, for example, "The Machinic Phylum," TechnoMorphica, 1997, https://v2.nl/archive/articles/the-machinic-phylum; "An Interview with Manuel DeLanda," with Konrad Becker and Miss M. at Virtual Futures, Warwick, 1996, http://www.t0.or.at/delanda/intdelanda.htm; and DeLanda, *A Thousand Years of Nonlinear History* (New York: Zone/Swerve Editions, 2000), 103.

34. Suhail Malik, "Hegemonic Neomaterialism and Its Limitations," https://research.gold.ac.uk/id/eprint/21510/1/1511-Springerin-FINAL.pdf.

35. See Meillassoux, "Iteration, Reiteration, Repetition."

36. Friedrich Nietzsche, *Beyond Good and Evil*, trans. Judith Norman (Cambridge: Cambridge University Press, 2002), §230.

p. 838 37. Nietzsche, *The Gay Science*, trans. Walter Kaufmann (New York: Vintage Books, 1974), §109.

38. See Meillassoux, "Iteration, Reiteration, Repetition," 122, 124–26, 131–32.

39. Meillassoux, "Iteration, Reiteration, Repetition," 132, 190n16.

40. See Quentin Meillassoux, "Potentiality and Virtuality," in *The Speculative Turn: Continental Realism and Materialism*, ed. Levi R. Bryant, Nick Srnicek, and Graham Harman (Melbourne: re:press, 2011), 235. See also Meillassoux, "Speculative Solution: Quentin Meillassoux and Florian Hecker Talk Hyperchaos," Urbanomic, July 22, 2010, 6–8, https://www.urbanomic.com/wp-content/uploads/2015/06/Urbanomic_Document_UFD001.pdf.

41. On this, see Hägglund, "Radical Atheist Materialism," 121.

42. Dennett, *Darwin's Dangerous Idea* (New York: Penguin, 1995), 203. Richard Dawkins offers a similar account in *The Selfish Gene* (Oxford: Oxford University Press, 1976).

43. Nietzsche, *Gay Science*, §109.

44. See Bruno Latour, *The Pasteurization of France*, trans. Alan Sheridan and John Law (Cambridge, MA: Harvard University Press, 1988), and "On the Partial Existence of Existing *and* Non-Existing Objects," in *Biographies of Scientific Objects*, ed. Lorraine Daston (Chicago: University of Chicago Press, 2000), 247–69.

45. Richard O. Prum, *The Evolution of Beauty* (New York: Doubleday, 2017). See also Prum, "The Ontology of Artworlds: A Post-Human, Coevolutionary Framework for Aesthetics, Art History, and Criticism," in *The Question of the Aesthetic*, ed. George Levine (Oxford: Oxford University Press, 2022), 42–67.

46. Nietzsche, *The Birth of Tragedy*, in *The Birth of Tragedy and The Case of Wagner*, trans. Walter Kaufmann (New York: Vintage, 1967), §5.

47. Susan Schüppli, "Dark Matters: An Interview with Susan Schüplli by Lucas van der Velden and Rosa Menkman," Sonic Acts, June 14, 2016, https://sonicacts.com/archive/dark-matters-an-interview-with-susan-schuppli. My emphasis.

48. Susan Schüppli, “Dirty Pictures,” in *Living Earth: Field Notes from the Dark Ecology Project 2014–16*, ed. Mirna Belina and Arie Altena (Amsterdam: Sonic Acts, 2016), 193. See also Susan Schüppli, “Slick Images: The Photogenic Politics of Oil,” in *Allegory of the Cave Painting*, ed. Mihnea Mirca and Vincent W. J. van Gerven Oei (Antwerp: Extra City, 2015), 425–47.

49. Schüppli, “Dirty Pictures,” 194.

50. Trevor Paglen, “Invisible Images (Your Pictures Are Looking at You),” *The New Inquiry*, December 8, 2016.

51. On this, also see Ingrid Hoelzl, “The Operative Image,” *The New Everyday*, February 3, 2014, http://mediacommons.org/tne/pieces/operative-image-and-approximation; and Joanna Zylinska, *Nonhuman Photography* (Cambridge, MA: MIT Press, 2017).

52. DeLanda, *Thousand Years of Nonlinear History*, 21.

53. See DeLanda, *Thousand Years of Nonlinear History*, 257–58.

54. The Vedas are a collection of texts (ca. 1500–500 BC) that form the basis of Hinduism. The Upanishads (ca. 800–100 BC), the concluding portions of the Vedas and the latest additions to the Vedic corpus, are considered the foundation of classical Indian philosophy.

55. Patrick Olivelle, trans. *The Early Upanisads* (New York: Oxford University Press, 1998), 289.

56. I explore this thesis at length in *Sonic Flux*.

p. 839 57. Gilles Deleuze, “Vincennes Session of April 15, 1980, Leibniz Seminar,” trans. Charles Stivale, *Discourse* 20, no. 3 (1998): 78, translation modified.

58. See Friedrich Kittler, *Gramophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young and Michael Wutz (Stanford, CA: Stanford University Press, 1999), intro., chap. 1.

59. See R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (Rochester, VT: Destiny Books, 1977), 5.

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