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Vibrant Matter

A Political Ecology of Things

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Preface

This book has a philosophical project and, related to it, a political one. The philosophical project is to think slowly an idea that runs fast through modern heads: the idea of matter as passive stuff, as raw, brute, or inert. This habit of parsing the world into dull matter (it, things) and vibrant life (us, beings) is a “partition of the sensible,” to use Jacques Rancière’s phrase.¹ The quarantines of matter and life encourage us to ignore the vitality of matter and the lively powers of material formations, such as the way omega-3 fatty acids can alter human moods or the way our trash is not “away” in landfills but generating lively streams of chemicals and volatile winds of methane as we speak.² I will turn the figures of “life” and “matter” around and around, worrying them until they start to seem strange, in something like the way a common word when repeated can become a foreign, nonsense sound. In the space created by this estrangement, a vital materiality can start to take shape.

Or, rather, it can take shape again, for a version of this idea already found expression in childhood experiences of a world populated by animate things rather than passive objects. I will try to reinvoke this

sense, to awaken what Henri Bergson described as "a latent belief in the spontaneity of nature."³ The idea of vibrant matter also has a long (and if not latent, at least not dominant) philosophical history in the West. I will reinvoké this history too, drawing in particular on the concepts and claims of Baruch Spinoza, Friedrich Nietzsche, Henry David Thoreau, Charles Darwin, Theodor Adorno, Gilles Deleuze, and the early twentieth-century vitalisms of Bergson and Hans Driesch.

The political project of the book is, to put it most ambitiously, to encourage more intelligent and sustainable engagements with vibrant matter and lively things. A guiding question: How would political responses to public problems change were we to take seriously the vitality of (nonhuman) bodies? By "vitality" I mean the capacity of things—edibles, commodities, storms, metals—not only to impede or block the will and designs of humans but also to act as quasi agents or forces with trajectories, propensities, or tendencies of their own. My aspiration is to articulate a vibrant materiality that runs alongside and inside humans to see how analyses of political events might change if we gave the force of things more due. How, for example, would patterns of consumption change if we faced not litter, rubbish, trash, or "the recycling," but an accumulating pile of lively and potentially dangerous matter? What difference would it make to public health if eating was understood as an encounter between various and variegated bodies, some of them mine, most of them not, and none of which always gets the upper hand? What issues would surround stem cell research in the absence of the assumption that the only source of vitality in matter is a soul or spirit? What difference would it make to the course of energy policy were electricity to be figured not simply as a resource, commodity, or instrumentality but also and more radically as an "actant"?

* The term is Bruno Latour's: an actant is a source of action that can be either human or nonhuman; it is that which has efficacy, can do things, has sufficient coherence to make a difference, produce effects, alter the course of events. It is "any entity that modifies another entity in a trial," something whose "competence is deduced from [its] performance" rather than posited in advance of the action.⁴ Some actants are better described as protoactants, for these performances or energies are too small or too fast to be "things."⁵ I admire Latour's attempt to develop a vocabulary that addresses multiple modes and degrees of effectivity, to

begin to describe a more distributive agency. Latour strategically elides what is commonly taken as distinctive or even unique about humans, and so will I. At least for a while and up to a point. I lavish attention on specific "things," noting the distinctive capacities or efficacious powers of particular material configurations. To attempt, as I do, to present human and nonhuman actants on a less vertical plane than is common is to bracket the question of the human and to elide the rich and diverse literature on subjectivity and its genesis, its conditions of possibility, and its boundaries. The philosophical project of naming where subjectivity begins and ends is too often bound up with fantasies of a human uniqueness in the eyes of God, of escape from materiality, or of mastery of nature; and even where it is not, it remains an aporetic or quixotic endeavor.

In what follows the otherwise important topic of subjectivity thus gets short shrift so that I may focus on the task of developing a vocabulary and syntax for, and thus a better discernment of, the active powers issuing from nonsubjects. I want to highlight what is typically cast in the shadow: the material agency or effectivity of nonhuman or not-quite-human things. I will try to make a meal out of the stuff left out of the feast of political theory done in the anthropocentric style. In so doing, I court the charge of performative self-contradiction: is it not a human subject who, after all, is articulating this theory of vibrant matter? Yes and no, for I will argue that what looks like a performative contradiction may well dissipate if one considers revisions in operative notions of matter, life, self, self-interest, will, and agency.

Why advocate the vitality of matter? Because my hunch is that the image of dead or thoroughly instrumentalized matter feeds human hubris and our earth-destroying fantasies of conquest and consumption. It does so by preventing us from detecting (seeing, hearing, smelling, tasting, feeling) a fuller range of the nonhuman powers circulating around and within human bodies. These material powers, which can aid or destroy, enrich or disable, ennoble or degrade us, in any case call for our attentiveness, or even "respect" (provided that the term be stretched beyond its Kantian sense). The figure of an intrinsically inanimate matter may be one of the impediments to the emergence of more ecological and more materially sustainable modes of production and consumption. My claims here are motivated by a self-interested

or conative concern for human survival and happiness: I want to promote greener forms of human culture and more attentive encounters between people-materialities and thing-materialities. (The “ecological” character of a vital materialism is the focus of the last two chapters.)

In the “Treatise on Nomadology,” Deleuze and Félix Guattari experiment with the idea of a “material vitalism,” according to which vitality is immanent in matter-energy.⁶ That project has helped inspire mine. Like Deleuze and Guattari, I draw selectively from Epicurean, Spinozist, Nietzschean, and vitalist traditions, as well as from an assortment of contemporary writers in science and literature. I need all the help I can get, for this project calls for the pursuit of several tasks simultaneously: (1) to paint a positive ontology of vibrant matter, which stretches received concepts of agency, action, and freedom sometimes to the breaking point; (2) to dissipate the onto-theological binaries of life/matter, human/animal, will/determination, and organic/inorganic using arguments and other rhetorical means to induce in human bodies an aesthetic-affective openness to material vitality; and (3) to sketch a style of political analysis that can better account for the contributions of nonhuman actants.

In what follows, then, I try to bear witness to the vital materialities that flow through and around us. Though the movements and effectivity of stem cells, electricity, food, trash, and metals are crucial to political life (and human life per se), almost as soon as they appear in public (often at first by disrupting human projects or expectations), these activities and powers are represented as human mood, action, meaning, agenda, or ideology. This quick substitution sustains the fantasy that “we” really are in charge of all those “its”—its that, according to the tradition of (nonmechanistic, nonteleological) materialism I draw on, reveal themselves to be potentially forceful agents.

Spinoza stands as a touchstone for me in this book, even though he himself was not quite a materialist. I invoke his idea of conative bodies that strive to enhance their power of activity by forming alliances with other bodies, and I share his faith that everything is made of the same substance. Spinoza rejected the idea that man “disturbs rather than follows Nature’s order,” and promises instead to “consider human actions and appetites just as if it were an investigation into lines, planes, or bodies.”⁷ Lucretius, too, expressed a kind of monism in his *De Rerum*

Natura: everything, he says, is made of the same quirky stuff, the same building blocks, if you will. Lucretius calls them primordia; today we might call them atoms, quarks, particle streams, or matter-energy. This same-stuff claim, this insinuation that deep down everything is connected and irreducible to a simple substrate, resonates with an ecological sensibility, and that too is important to me. But in contrast to some versions of deep ecology, my monism posits neither a smooth harmony of parts nor a diversity unified by a common spirit. The formula here, writes Deleuze, is “ontologically one, formally diverse.”⁸ This is, as Michel Serres says in *The Birth of Physics*, a turbulent, immanent field in which various and variable materialities collide, congeal, morph, evolve, and disintegrate.⁹ Though I find Epicureanism to be too simple in its imagery of individual atoms falling and swerving in the void, I share its conviction that there remains a natural tendency to the way things are—and that human decency and a decent politics are fostered if we tune in to the strange logic of turbulence.

Impersonal Affect

When I wrote *The Enchantment of Modern Life*, my focus was on the ethical relevance of human affect, more specifically, of the mood of enchantment or that strange combination of delight and disturbance. The idea was that moments of sensuous enchantment with the everyday world—with nature but also with commodities and other cultural products—might augment the motivational energy needed to move selves from the endorsement of ethical principles to the actual practice of ethical behaviors.

The theme of that book participated in a larger trend within political theory, a kind of ethical and aesthetic turn inspired in large part by feminist studies of the body and by Michel Foucault’s work on “care of the self.” These inquiries helped put “desire” and bodily practices such as physical exercise, meditation, sexuality, and eating back on the ethical radar screen. Some in political theory, perhaps most notably Nancy Fraser in *Justice Interruptus*, criticized this turn as a retreat to soft, psycho-cultural issues of identity at the expense of the hard, political issues of economic justice, environmental sustainability, human

rights, or democratic governance. Others (I am in this camp) replied that the bodily disciplines through which ethical sensibilities and social relations are formed and reformed are themselves political and constitute a whole (underexplored) field of "micropolitics" without which 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.

The ethical turn encouraged political theorists to pay more attention to films, religious practices, news media rituals, neuroscientific experiments, and other noncanonical means of ethical will formation. In the process, "ethics" could no longer refer primarily to a set of doctrines; it had to be considered as a complex set of relays between moral contents, aesthetic-affective styles, and public moods. Here political theorists affirmed what Romantic thinkers (I am thinking of Jean-Jacques Rousseau, Friedrich Schiller, Nietzsche, Ralph Waldo Emerson, Thoreau, and Walt Whitman) had long noted: if a set of moral principles is actually to be lived out, the right mood or landscape of affect has to be in place.

I continue to think of affect as central to politics and ethics, but in this book I branch out to an "affect" not specific to human bodies. I want now to focus less on the enhancement to human relational capacities resulting from affective catalysts and more on the catalyst itself as it exists in nonhuman bodies. This power is not transpersonal or intersubjective but impersonal, an affect intrinsic to forms that cannot be imagined (even ideally) as persons. I now emphasize even more how the figure of enchantment points in two directions: the first toward the humans who feel enchanted and whose agentic capacities may be thereby strengthened, and the second toward the agency of the things that produce (helpful, harmful) effects in human and other bodies.¹⁰ Organic and inorganic bodies, natural and cultural objects (these distinctions are not particularly salient here) all are affective. I am here drawing on a Spinozist notion of affect, which refers broadly to the capacity of any body for activity and responsiveness. Deleuze and Guattari put the point this way: "We know nothing about a body until we know what it can do, in other words, what its affects are, how they can or cannot enter into composition with other affects, with the affects of another body, . . . to destroy that body or to be destroyed by it, . . . to exchange actions and passions with it or to join with in composing

a more powerful body."¹¹ Or, according to David Cole, "affects entail the colliding of particle-forces delineating the impact of one body on another; this could also be explained as the capacity to feel force before [or without] subjective emotion. . . . Affects create a field of forces that do not tend to congeal into subjectivity."¹² What I am calling impersonal affect or material vibrancy is not a spiritual supplement or "life force" added to the matter said to house it. Mine is not a vitalism in the traditional sense; I equate affect with materiality, rather than posit a separate force that can enter and animate a physical body.

My aim, again, is to theorize a vitality intrinsic to materiality as such, and to detach materiality from the figures of passive, mechanistic, or divinely infused substance. This vibrant matter is not the raw material for the creative activity of humans or God. It is my body, but also the bodies of Baltimore litter (chapter 1), Prometheus's chains (chapter 4), and Darwin's worms (chapter 7), as well as the not-quite-bodies of electricity (chapter 2), ingested food (chapter 3), and stem cells (chapters 5 and 6).

A Note on Methodology

I pursue a materialism in the tradition of Democritus-Epicurus-Spinoza-Diderot-Deleuze more than Hegel-Marx-Adorno. It is important to follow the trail of human power to expose social hegemonies (as historical materialists do). But my contention is that there is also public value in following the scent of a nonhuman, thingly power, the material agency of natural bodies and technological artifacts. Here I mean "to follow" in the sense in which Jacques Derrida develops it in the context of his meditation on animals. Derrida points to the intimacy between being and following: to be (anything, anyone) is always to be following (something, someone), always to be in response to call from something, however nonhuman it may be.¹³

What method could possibly be appropriate for the task of speaking a word for vibrant matter? How to describe without thereby erasing the independence of things? How to acknowledge the obscure but ubiquitous intensity of impersonal affect? What seems to be needed is a certain willingness to appear naive or foolish, to affirm what Adorno called his "clownish traits."¹⁴ This entails, in my case, a willingness to

The *Figure of the Affect*

theorize events (a blackout, a meal, an imprisonment in chains, an experience of litter) as encounters between ontologically diverse actants, some human, some not, though all thoroughly material.¹⁵

What is also needed is a cultivated, patient, sensory attentiveness to nonhuman forces operating outside and inside the human body. I have tried to learn how to induce an attentiveness to things and their affects from Thoreau, Franz Kafka, and Whitman, as well as from the eco- and ecofeminist philosophers Romand Coles, Val Plumwood, Wade Sikorski, Freya Mathews, Wendell Berry, Angus Fletcher, Barry Lopez, and Barbara Kingsolver. Without proficiency in this countercultural kind of perceiving, the world appears as if it consists only of active human subjects who confront passive objects and their law-governed mechanisms. This appearance may be indispensable to the action-oriented perception on which our survival depends (as Nietzsche and Bergson each in his own way contends), but it is also dangerous and counterproductive to live this fiction all the time (as Nietzsche and Bergson also note), and neither does it conduce to the formation of a "greener" sensibility.

For this task, demystification, that most popular of practices in critical theory, should be used with caution and sparingly, because demystification presumes that at the heart of any event or process lies a human agency that has illicitly been projected into things. This hermeneutics of suspicion calls for theorists to be on high alert for signs of the secret truth (a human will to power) below the false appearance of nonhuman agency. Karl Marx sought to demystify commodities and prevent their fetishization by showing them to be invested with an agency that belongs to humans; patriotic Americans under the Bush regime exposed the self-interest, greed, or cruelty inside the "global war on terror" or inside the former attorney general Alberto Gonzales's version of the rule of law; the feminist theorist Wendy Brown demystifies when she promises to "remove the scales from our eyes" and reveal that "the discourse of tolerance . . . [valorizes] the West, othering the rest . . . while feigning to do no more than . . . extend the benefits of liberal thought and practices."¹⁶

Demystification is an indispensable tool in a democratic, pluralist politics that seeks to hold officials accountable to (less unjust versions of) the rule of law and to check attempts to impose a system of (racial, civilizational, religious, sexual, class) domination. But there are limits to its political efficacy, among them that exposés of illegality, greed,

mendacity, oligarchy, or hypocrisy do not reliably produce moral outrage and that, if they do, this outrage may or may not spark ameliorative action. Brown, too, acknowledges that even if the exposé of the "false conceits" of liberal tolerance were to weaken the "justification" for the liberal quest for empire, it would not necessarily weaken the "motivation" for empire.¹⁷ What is more, ethical political action on the part of humans seems to require not only a vigilant critique of existing institutions but also positive, even utopian alternatives.¹⁸ Jodi Dean, another advocate for demystification, recognizes this liability: "If all we can do is evaluate, critique, or demystify the present, then what is it that we are hoping to accomplish?"¹⁹ A relentless approach toward demystification works against the possibility of positive formulations. In a discussion of the François Mitterand government, Foucault broke with his former tendency to rely on demystification and proposed specific reforms in the domain of sexuality: "I've become rather irritated by an attitude, which for a long time was mine, too, and which I no longer subscribe to, which consists in saying: our problem is to denounce and criticize: let them get on with their legislation and reforms. That doesn't seem to me like the right attitude."²⁰ The point, again, is that we need both critique and positive formulations of alternatives, alternatives that will themselves become the objects of later critique and reform.

What demystification uncovers is always something human, for example, the hidden quest for domination on the part of some humans over others, a human desire to deflect responsibility for harms done, or an unjust distribution of (human) power. Demystification tends to screen from view the vitality of matter and to reduce *political* agency to *human* agency. Those are the tendencies I resist.

The capacity to detect the presence of impersonal affect requires that one is caught up in it. One needs, at least for a while, to suspend suspicion and adopt a more open-ended comportment. If we think we already know what is out there, we will almost surely miss much of it.

Materialisms

Several years ago I mentioned to a friend that Thoreau's notion of the Wild had interesting affinities with Deleuze's idea of the virtual and with Foucault's notion of the unthought. All three thinkers are trying

to acknowledge a force that, though quite real and powerful, is intrinsically resistant to representation.²¹ My friend replied that she did not much care for French poststructuralism, for it “lacked a materialist perspective.” At the time I took this reply as a way of letting me know that she was committed to a Marx-inspired, egalitarian politics. But the comment stuck, and it eventually provoked these thoughts: Why did Foucault’s concern with “bodies and pleasures” or Deleuze’s and Guattari’s interest in “machinic assemblages” not count as *materialist*? How did Marx’s notion of materiality—as economic structures and exchanges that provoke many other events—come to stand for the materialist perspective per se? Why is there not a more robust debate between contending philosophies of materiality or between contending accounts of how materiality matters to politics?

For some time political theory has acknowledged that materiality matters. But this materiality most often refers to human social structures or to the human meanings “embodied” in them and other objects. Because politics is itself often construed as an exclusively human domain, what registers on it is a set of material constraints on or a context for human action. Dogged resistance to anthropocentrism is perhaps the main difference between the vital materialism I pursue and this kind of historical materialism.²² I will emphasize, even overemphasize, the agentic contributions of nonhuman forces (operating in nature, in the human body, and in human artifacts) in an attempt to counter the narcissistic reflex of human language and thought. We need to cultivate a bit of anthropomorphism—the idea that human agency has some echoes in nonhuman nature—to counter the narcissism of humans in charge of the world.

— In chapter 1, “The Force of Things,” I explore two terms in a vital materialist vocabulary: *thing-power* and the *out-side*. Thing-power gestures toward the strange ability of ordinary, man-made items to exceed their status as objects and to manifest traces of independence or aliveness, constituting the outside of our own experience. I look at how found objects (my examples come from litter on the street, a toy creature in a Kafka story, a technical gadget used in criminal investigations) can become vibrant things with a certain effectivity of their own, a perhaps small but irreducible degree of independence from the words, images, and feelings they provoke in us. I present this as a liveliness intrinsic to the materiality of the thing formerly known as an object. This raises a

metaquestion: is it really possible to theorize this vibrancy, or is it (as Adorno says it is) a quest that is not only futile but also tied to the hubristic human will to comprehensive knowledge and the violent human will to dominate and control? In the light of his critique, and given Adorno’s own efforts in *Negative Dialectics* to “grope toward the preponderance of the object,” I defend the “naive” ambition of a vital materialism.²³

The concept of thing-power offers an alternative to the object as a way of encountering the nonhuman world. It also has (at least) two liabilities: first, it attends only to the vitality of stable or fixed entities (things), and second, it presents this vitality in terms that are too individualistic (even though the individuals are not human beings). In chapter 2, “The Agency of Assemblages,” I enrich the picture of material agency through the notion of “assemblages,” borrowed from Deleuze and Guattari. The locus of agency is always a human-nonhuman working group. I move from the vitality of a discrete thing to vitality as a (Spinozist) function of the tendency of matter to conglomerate or form heterogeneous groupings. I then explore the agency of human-nonhuman assemblages through the example of the electrical power grid, focusing on a 2003 blackout that affected large sections of North America.

In chapter 3, “Edible Matter,” I repeat the experiment by focusing on food. Drawing on studies of obesity, recent food writing, and on ideas formulated by Thoreau and Nietzsche on the question of diet, I present the case for edible matter as an actant operating inside and alongside humankind, exerting influence on moods, dispositions, and decisions. I here begin to defend a conception of self, developed in later chapters, as itself an impure, human-nonhuman assemblage. I also consider, but ultimately eschew, the alternative view that the vibrancy I posit in matter is best attributed to a nonmaterial source, to an animating spirit or “soul.”

Chapter 4, “A Life of Metal,” continues to gnaw away at the life/matter binary, this time through the concept of “a life.” I take up the hard case for a (nonmechanistic) materialism that conceives of matter as intrinsically lively (but not ensouled): the case of inorganic matter. My example is metal. What can it mean to say that metal—usually the avatar of a rigid and inert substance—is vibrant matter? I compare the “adamantine chains” that bind Aeschylus’s Prometheus to a rock to the polycrystalline metal described by the historian of science Cyril Smith.

Vital materialism as a doctrine has affinities with several nonmodern

(and often discredited) modes of thought, including animism, the Romantic quest for Nature, and vitalism. Some of these affinities I embrace, some I do not. I reject the life/matter binary informing classical vitalism. In chapters 5 and 6 I ask why this divide has been so persistent and defended so militantly, especially as developments in the natural sciences and in bioengineering have rendered the line between organic and inorganic, life and matter, increasingly problematic. In Chapter 5, "Neither Mechanism nor Vitalism," I focus on three fascinating attempts to name the "vital force" in matter: Immanuel Kant's *Bildungstrieb*, the embryologist Driesch's entelechy, and Bergson's *élan vital*. Driesch and Bergson both sought to infuse philosophy with the science of their day, and both were skeptical about mechanistic models of nature. To me, their vitalisms constituted an invaluable holding action, maintaining an open space that a philosophy of vibrant materiality could fill.

In Chapter 6, "Stems Cells and the Culture of Life," I explore the latter-day vitalism of George W. Bush and other evangelical defenders of a "culture of life" as expressed in political debates about embryonic stem cell research during the final years of the Bush administration. I appreciate the pluripotentiality of stem cells but resist the effort of culture-of-life advocates to place these cells on one side of a radical divide between life and nonlife.

Chapter 7, "Political Ecologies," was the most difficult to conceive and write, because there I stage a meeting between the (meta)physics of vital materialism and a political theory. I explore how a conception of vibrant matter could resound in several key concepts of political theory, including the "public," "political participation," and "the political." I begin with a discussion of one more example of vibrant matter, the inventive worms studied by Darwin. Darwin treats worms as actants operating not only in nature but in history: "Worms have played a more important part in the history of the world than most persons would at first assume."²⁴ Darwin's anthropomorphizing prompts me to consider the reverse case: whether a polity might itself be a kind of ecosystem. I use (and stretch) John Dewey's model of a public as the emergent effect of a problem to defend such an idea. But I also consider the objection to it posed by Rancière, who both talks about dissonances coming from outside the regime of political intelligibility and models politics as a unique realm of exclusively human endeavor. I end the chapter by

endorsing a definition of politics as a political ecology and a notion of publics as human-nonhuman collectives that are provoked into existence by a shared experience of harm. I imagine this public to be one of the "disruptions" that Rancière names as the quintessentially political act.

In the last chapter, "Vitality and Self-interest," I gather together the various links between ecophilosophy and a vital materialism. What are some tactics for cultivating the experience of our selves as vibrant matter? The task is to explore ways to engage effectively and sustainably this enchanting and dangerous matter-energy.

Political Ecologies

In this chapter I have two goals. The first is easier than the second: I retell a couple of worm stories, first heard from Charles Darwin and Bruno Latour, to show how worms are “like” us. Here, as elsewhere in the book, I find in a non- or not-quite-human body evidence of the vitality of matter. Worms, or electricity, or various gadgets, or fats, or metals, or stem cells are actants, or what Darwin calls “small agencies,” that, when in the right confederation with other physical and physiological bodies, can make big things happen. The second goal is to confront the hard question of the *political* capacity of actants. Even if a convincing case is made for worms as active members of, say, the ecosystem of a rainforest, can worms be considered members of a *public*? What is the difference between an ecosystem and a political system? Are they analogs? Two names for the same system at different scales? What is the difference between an actant and a political actor? Is there a clear difference? Does an action count as *political* by virtue of its having taken place “in” a public? Are there nonhuman members of a public? What, in sum, are the implications of a (meta)physics of vibrant materiality for political theory?

After the worm stories, I try to explore these very difficult questions by engaging two theories of democracy. I will focus on their different understandings of what a public is, how a public is formed and deformed, and what counts as a political act. I choose the first theory, by John Dewey, because in it the analogy between an ecosystem and a political system is fairly strong and the gap between action and political action relatively small. Key here is Dewey’s notion of the generative field that he calls “conjoint action.” Conjoint action is the agency behind the emergence of a public; a public’s agency or capacity to produce effects is also a function of conjoint action. Dewey’s theory leaves open the possibility that some of the acts of conjoint action originate in non-human (natural and technological) bodies. I choose the second theory, that of Jacques Rancière, because it emphasizes the extent to which the political constitutes a distinctive realm of action and thus outlines why a polity ought not to be considered an ecology. On Rancière’s account, the public is constituted by bodies with uniquely human capabilities, talents, and skills, and political action is something that only they can do. Both models are instructive, and together they help us begin to discern the politics of vital materialism.

The “Small Agency” of Worms

Darwin watched English worms: many, many of them for many, many hours. He watched how they moved, where they went, and what they did, and, most of all, he watched how they made topsoil or “vegetable mould”: after digesting “earthly matter,” they would deposit the castings at the mouth of their burrows, thus continually bringing to the surface a refined layer of vegetable mold. It is, writes Darwin, “a marvellous reflection that the whole of the . . . mould over any . . . expanse has passed, and will again pass, every few years through the bodies of worms.”¹ But the claim with which Darwin ends his *Formation of Vegetable Mould through the Actions of Worms with Observations on Their Habits* (1881) is not about biology or agronomy but about history: “Worms have played a more important part in the history of the world than most persons would at first assume” (*Mould*, 305). How do worms make history? They make it by making vegetable mold, which makes possible “seedlings of all kinds,” which makes possible an earth hospitable to humans, which

makes possible the cultural artifacts, rituals, plans, and endeavors of human history (Mould, 309). Worms also "make history" by preserving the artifacts that humans make: worms protect "for an indefinitely long period every object, not liable to decay, which is dropped on the surface of the land, by burying it beneath their castings," a service for which "archaeologists ought to be grateful to worms" (Mould, 308).

against divine agency
 Darwin claims that worms inaugurate human culture and then, working alongside people and their endeavors, help preserve what people and worms together have made. Darwin does not claim that worms intend to have this effect so beneficial to humankind, or that any divine intention is at work through them. Rather, that the exertions of worms contribute to human history and culture is the unplanned result of worms acting in conjunction and competition with other (biological, bacterial, chemical, human) agents. Darwin describes the activities of worms as one of many "small agencies" whose "accumulated effects" turn out to be quite big.² It would be consistent with Darwin to say that worms participate in heterogeneous assemblages in which agency has no single locus, no mastermind, but is distributed across a swarm of various and variegated vibrant materialities.³

Liquid Revolution
 Worms do not intend to enable human culture, but worms do, according to Darwin, pursue what appear to be prospective endeavors. His close observations of worms led him to conclude that worm actions are not the result of "an unvarying inherited impulse" (Mould, 64–65), but are intelligent improvisations. For example, in "plugging up the mouths of their burrows" with leaves, worms "act in nearly the same manner as would a man"—that is, they make apparently free, or at least unpredictable, decisions based on the available materials. Though they usually seize leaves (to be dragged to their burrows) by their pointed ends, "they do not act in the same unvarying manner in all cases," but adjust their technique to the particular situation and its set of possibilities: Which leaves are available? Is the ground wet or dry? What other creatures are around? (Mould, 312). Further evidence of a certain freedom to their acts is the phenomenon of a worm *overriding* a normal physiological response, as when a worm fails to recoil and retreat to its burrow when exposed to a bright light. Darwin notes that this overruling occurs when a worm is focused closely on a task, such as eating, dragging leaves, or mating:

When a worm is suddenly illuminated and dashes like a rabbit into its burrow . . . we are at first led to look at the action as a reflex one. The irritation of the cerebral ganglia appears to cause certain muscles to contract in an inevitable manner, independently of the will or consciousness . . . , as if it were an automaton. But [this is contested by] . . . the fact that a worm when in any way employed and in the intervals of such employment, whatever set of muscles and ganglia may then have been brought into play, is often regardless of light. . . . With the higher animals, when close attention to some object leads to the disregard of the impressions which other objects must be producing on them, we attribute this to their attention being then absorbed; and attention implies the presence of a mind. (Mould, 23–24)

Darwin's worms pay attention, and they respond appropriately to unprecedented situations, displaying what Hans Driesch called the power of "individual correspondence." Their actions are neither an expression of divine purpose nor reducible to an unvarying mechanical instinct. Let us call the assemblage in which these wiggling actants participate not (as in Baruch Spinoza) God or Nature, but History or Nature, or, to be more precise, British History or England's Nature. This assemblage is an ecology in the sense that it is an interconnected series of parts, but it is not a fixed order of parts, for the order is always being reworked in accordance with a certain "freedom of choice" exercised by its actants.

In *Pandora's Hope*, Latour tells a story about Amazonian rather than English worms, and again we see that worms play a more important part in the history of (that part of) the world than most persons would at first suppose. The story begins with the puzzling presence, about ten meters into the rainforest, of trees typical only of the savanna. The soil under these trees is "more clayey than the savanna but less so than the forest." How was the border between savanna and forest breached? Did "the forest cast its own soil before it to create conditions favorable to its expansion," or is the savanna "degrading the woodland humus as it prepares to invade the forest"?⁴ This question presumes a kind of vegetal agency in a natural system understood not as a mechanical order of fixed laws but as the scene of not-fully-predictable encounters between multiple kinds of actants. Savanna vegetation, forest trees, soil, soil microorganisms, and humans native and exotic to the rainforest are all responding, in real time and without predetermined outcome, to each other and to the collective force of the shifting configurations that form.

The task at hand for humans is to find a more horizontal representation of the relation between human and nonhuman actants in order to be more faithful to the style of action pursued by each.

Latour and the scientists he is observing eventually conclude that, for reasons unknown to the humans, worms had gathered at the border and produced a lot of aluminum, which transformed the silica of the sandy soil into the clay more amenable to forest trees, and so it was the forest that was advancing into the savanna.⁵ It is difficult to pinpoint just who or what was the key operator or "assemblage converter" here:⁶ The worms? Their diet? The aluminum excrement? Had the human inhabitants of the rainforest done something to make the worms migrate? These various materialities do not exercise exactly the same kind of agency, but neither is it easy to arrange them into a hierarchy, for in some times and places, the "small agency" of the lowly worm makes more of a difference than the grand agency of humans.

We consider it a political act, for example, when people distribute themselves into racially and economically segregated neighborhoods, even if, in doing so, they are following a cultural trend and do not explicitly intend, endorse, or even consider the impact of their movements on, say, municipal finances, crime rates, or transportation policy. There are many affinities between the act of persons dragging their belongings to their new homes in the suburbs and the acts of worms dragging leaves to their burrows or migrating to a savanna-forest border.

A Note on Anthropomorphism

Darwin and Latour help make a case for worms as vibrant material actants whose difference from us may be smaller than we thought. And without worms or aluminum (or edibles or stem cells) and their conative endeavors, it would be difficult if not impossible for humans to exercise our exquisite wills or intentions. It seems both that worms are "like" us and that (to use a Kantian formulation) we must posit a certain nonhuman agency as the condition of possibility of human agency. Or are these claims fatally dependent on anthropomorphization?

Anthropomorphizing, the interpretation of what is not human or personal in terms of human or personal characteristics, is clearly a part of

the story, but it is less clear how fatal it is. According to George Levine, "Darwin's extraordinary curiosity about the talents of worms has to do with his inveterate anthropomorphism," which was "absolutely central to his larger theoretical project."⁷ Darwin anthropomorphized his worms: he saw in them an intelligence and a willfulness that he recognized as related to his own. But the narcissism of this gaze backfired, for it also prompted Darwin to pay close attention to the mundane activities of worms, and what came to the fore through paying attention was their own, distinctive, material complexity. He was able to detect what natural historians call the "jizz" of a worm, which the geographer Jamie Lorimer describes as "the unique combination of properties . . . that allows its ready identification and differentiation from others."⁸ In a vital materialism, an anthropomorphic element in perception can uncover a whole world of resonances and resemblances—sounds and sights that echo and bounce far more than would be possible were the universe to have a hierarchical structure. We at first may see only a world in our own image, but what appears next is a swarm of "talented" and vibrant materialities (including the seeing self).

A touch of anthropomorphism, then, can catalyze a sensibility that finds a world filled not with ontologically distinct categories of beings (subjects and objects) but with variously composed materialities that form confederations. In revealing similarities across categorical divides and lighting up structural parallels between material forms in "nature" and those in "culture," anthropomorphism can reveal isomorphisms. A good example of this is the sensibility expressed in the *Great Treatise on Supreme Sound*, a fourteenth-century handbook for musicians. It describes the various sounds of the lute in terms of a movement style expressed by an animal and instructs the lute player to mimic that movement style: to make a staccato sound, the player should try to reproduce with his finger the motion of "an emaciated crow perched on a bare tree or pecking at the snow in hope of finding something to eat"; to make the characteristic sound that comes when the index, middle, and third fingers grip two strings at once, the lutist is to render his hand in the image of "the nonchalant flick of a carp's tail"; to produce a "floating sound," fingers should imitate the series of movements made by a "white butterfly fluttering at flower level" who "lingers but does not stay."⁹ In the twentieth century, complexity theory also focused on iso-

isomorphic resonances. Clusters of neurons in a human brain, groupings of buildings in a city, and colonies of slime molds all have been shown to follow similar organizational rules; each is an instance of what Steven Johnson has called "organized complexity."¹⁰

The Public and Its Problems

What, if anything, does the claim that worms and trees and aluminum are participants in an ecosystem say about political participation? The answer depends in part on whether a political system itself constitutes a kind of ecosystem. Dewey's notion of a public suggests that it does. I turn now to him and to the advantages and limits of modeling politics as an ecology. If Darwin highlights the power of choice in worms to contest the idea that worms are moved only by animal instinct or bodily affect, Dewey closes the gap between human and nonhuman from the other direction: he highlights the affective, bodily nature of human responses.

In *The Public and Its Problems*, Dewey presents a public as a confederation of bodies, bodies pulled together not so much by choice (a public is not exactly a voluntary association) as by a shared experience of harm that, over time, coalesces into a "problem." Dewey makes it clear that a public does not preexist its particular problem but emerges in response to it.¹¹ A public is a contingent and temporary formation existing alongside many other publics, protopublics, and residual or postpublics. Problems come and go, and so, too, do publics: at any given moment, many different publics are in the process of crystallizing and dissolving.¹²

When diverse bodies suddenly draw near and form a public, they have been provoked to do so by a problem, that is, by the "indirect, serious and enduring" consequences of "conjoint action."¹³ Problems are effects of the phenomenon of conjoint action. Like the conjoint action of Darwin's worms, the conjoint action of Dewey's citizens is not under the control of any rational plan or deliberate intention. No efficient cause of the problems it generates can really be pinpointed. What is more, there is no action that is not conjoint, that does not, in other words, immediately become enmeshed in a web of connections. For Dewey, any action is always a trans-action, and any act is really but an initiative

that gives birth to a cascade of legitimate and bastard progeny. This is because an act can only take place in a field already crowded with other endeavors and their consequences, a crowd with which the new entrant immediately interacts, overlaps, interferes. The field of political action is thus for Dewey a kind of ecology. No one body owns its supposedly own initiatives, for initiatives instantly conjoin with an impersonal swarm of contemporaneous endeavors, each with its own duration and intensity, with endeavors that are losing or gaining momentum, rippling into and recombining with others. In Dewey's own terms, conjoint actions generate "multitudinous consequences," and each of these consequences "crosses the others" to generate its own problems, and thus its own publics or "group of persons especially affected."¹⁴

Dewey imagines a public as a set of bodies affected by a common problem generated by a pulsing swarm of activities. Let us bracket for the moment Dewey's claim that a public is a group of "persons especially affected" and leave aside the question of what kinds of bodies can do the "acts" that are conjoining, and focus instead on the way Dewey defines the members of a public in terms of their "affective" capacity. We would then get this (Spinozist) version of Dewey's theory of the public and of conjoint action: problems give rise to publics, publics are groups of bodies with the capacity to affect and be affected; problems are signals that the would-be or protomembers of a public had already encountered the indirect effects of other endeavoring bodies, effects that have decreased the capacity for action of the protomembers. A public is a cluster of bodies harmed by the actions of others or even by actions born from their own actions as these trans-act; harmed bodies draw near each other and seek to engage in new acts that will restore their power, protect against future harm, or compensate for damage done—in that consists their political action, which, fortunately or unfortunately, will also become conjoint action with a chain of indirect, unpredictable consequences.

Dewey presents the members of a public as having been *inducted* into rather than *volunteering* for it: each body finds itself thrown together with other harmed and squirming bodies. Dewey's political pragmatism, like the one expressed at the end of my discussion of the blackout in chapter 2, emphasizes consequences more than intentions and makes "responsibility" more a matter of responding to harms than of

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identifying objects of blame. Dewey's concept of conjoint action distributes responsibility to many different (human) actors. What is more, in naming a *problem* (rather than an act of will) as the driving force behind the formation of a public, Dewey (almost) acknowledges that a *political* action need not originate in human bodies at all. For is it not the case that some of the initiatives that conjoin and cause harm started from (or later became conjoined with) the vibrant bodies of animals, plants, metals, or machines?

In *Art as Experience*, Dewey comes close to saying that even human initiatives are not *exclusively* human; he flirts with a posthuman conception of action when he notes the porosity of the border between a human body and its out-side: "The epidermis is only in the most superficial way an indication of where an organism ends and its environment begins. There are things inside the body that are foreign to it, and there are things outside of it that belong to it *de jure* if not *de facto*; that must be taken possession of if life is to continue. The need that is manifest in the urgent impulsions that demand completion through what the environment—and it alone—can supply, is a dynamic acknowledgment of this dependence of the self for wholeness upon its surroundings."¹⁵

Of course, Dewey is not quite a vital materialist. His language quoted above ultimately relegates the nonhuman and the nonorganic to the role of "environment" rather than actor and affirms a profound "dependence" of humans on "surroundings," but not a true reciprocity between participants of various material compositions. And Dewey generally assumes that the acts in conjoint action are *human* endeavors. Such anthropocentrism is impossible to avoid completely: as Theodor Adorno said, we are (almost) blind to the gap between concept and thing, and we have a tendency, as did even Spinoza, to privilege *human* efforts even when acknowledging the presence of other kinds of conative bodies. A pragmatic approach to politics, which emphasizes problem solving, may call forth with particular vigor what Henri Bergson described as action-oriented perception. For are not human bodies the ones best equipped to analyze a problem and devise strategies for its solution? All kinds of bodies may be able to join forces, but a pragmatist would be quick to note that only *some* bodies can make this association into a *task* force. And yet there also persists a self-interested motivation for the presumption that all material bodies are potential members of the public into

not materialism;
pragmatic politics

which one has been inducted. Such a presumption will enable me to discern more fully the extent of their power over me: How is this food or worm or aluminum contributing to a problem affecting me? How might these nonhumans contribute to its solution?

* Latour pushes Dewey's theory of the public and its problems further in a vital materialist direction. He does so, first, by inventing the concept of an actant, which is an attempt, as is conjoint action, to pry some space between the idea of action and the idea of human intentionality. Second, Latour explicitly rejects the categories of "nature" and "culture" in favor of the "collective," which refers to an ecology of human and nonhuman elements.¹⁶ A polity is one of these collectives. Third, Latour frames political action not as the enactment of choices but as the call-and-response between "propositions."¹⁷ A proposition has no decisionistic power but is a lending of weight, an incentive toward, a pressure in the direction of one trajectory of action rather than another.¹⁸ Any given response to a problem is less the result of "deliberation" than of the "fermentation" of the various propositions and energies of the affected bodies.¹⁹ Finally, Latour distributes agentic capacity also to the "event." Policy directions and political moods are irreducible to the sum of the propositions of even an ontologically plural public, for there is always a slight surprise of action: "There are events. I never *act*; I am always slightly surprised by what I do. That which acts through me is also surprised by what I do, by the chance to mutate, to change, and to bifurcate."²⁰

Dewey's account of a public as the product of conjoint action paints a picture of a political system that has much in common with a dynamic natural ecosystem. This, along with his claim that a member of a public is one "affected by the indirect consequences of transactions to such an extent that it is deemed necessary to have those consequences systematically cared for,"²¹ paves the way for a theory of action that more explicitly accepts nonhuman bodies as members of a public, more explicitly attends to how they, too, participate in conjoint action, and more clearly discerns instances of harm to the (affective) bodies of animals, vegetables, minerals, and their ecocultures. These harms will surely provoke some "events" in response, but it is an open question whether they will provoke people to throw their weight toward a solution to them. Humans may notice the harm too late to intervene effectively, or their

strategies of intervention may be ineffective, or they simply may deem it unnecessary "to systematically care for" a harm, as we regularly sacrifice some actants for the sake of ourselves. For while every public may very well be an ecosystem, not every ecosystem is democratic. And I cannot envision any polity so egalitarian that important human needs, such as health or survival, would not take priority.

Why not? Since I have challenged the uniqueness of humanity in several ways, why not conclude that we and they are equally entitled? Because I have not eliminated all differences between us but examined instead the affinities across these differences, affinities that enable the very assemblages explored in the present book. To put it bluntly, my conatus will not let me "horizontalize" the world completely. I also identify with members of my species, insofar as they are bodies most similar to mine. I so identify even as I seek to extend awareness of our interinvolvements and interdependencies. The political goal of a vital materialism is not the perfect equality of actants, but a polity with more channels of communication between members. (Latour calls this a more "vascularized" collective.²²)

There are many practical and conceptual obstacles here: How can communication proceed when many members are nonlinguistic? Can we theorize more closely the various forms of such communicative energies? How can humans learn to hear or enhance our receptivity for "propositions" not expressed in words? How to translate between them? What kinds of institutions and rituals of democracy would be appropriate? Latour suggests that we convene a "parliament of things," an idea that is as provocative as it is elusive.²³ Perhaps we can make better progress on this front by looking at a theory designed to open democracy to the voices of excluded humans. I turn to Rancière's theory of democracy as disruption.

Disruptions and the Demos

Compared to Dewey and Latour, Rancière is less concerned with how a public emerges than with the means by which its (apparent) coherence can be interrupted. In his influential *Disagreement*, he focuses on a potentially disruptive human force that exists within (though is not

recognized by) the public. He calls this the force of the people or of the "demos." The democratic act par excellence occurs when the demos does something that exposes the arbitrariness of the dominant "partition of the sensible."²⁴ This is the partition that had been rendering some people visible as political actors while pushing others below the threshold of note. Politics, as Rancière frames it, consists not in acts that preserve a political order or respond to already articulated problems, but is "the name of a singular disruption of this order of distribution of bodies."²⁵

These singular disruptions are neither intentional acts nor aleatory eruptions; Rancière locates them in the between-space of the staged event. The demos more or less spontaneously constructs "a polemical scene" within which what was formerly heard as noise by powerful persons begins to sound to them like "argumentative utterances."²⁶ Such scenes, however different in their cast of characters, always tell the same story: the story of "the equality of speaking beings."²⁷ The "mise-en-scènes that reconfigure the relations of the visible and the sayable" expose "the ultimate secret of any social order,"²⁸ that is, that "there is no natural principle of domination by one person over another."²⁹

For Rancière, then, the political act consists in the exclamatory interjection of affective bodies as they enter a preexisting public, or, rather, as they reveal that they have been there all along as an unaccounted-for part. (Rancière would be helped here, I think, were he to adopt Dewey's insight about multiple, coexisting publics, rather than speak of a single demos with an overt and a latent set of members.) What difference does this interjection by formerly ignored bodies make, according to Rancière? It modifies the "partition of the perceptible" or the "regime of the visible,"³⁰ and this changes everything. As an example Rancière cites the interruption staged by the plebeians of the Roman (patrician) Republic:

The plebs gathered on the Aventine . . . do not set up a fortified camp in the manner of the Scythian slaves. They do what would have been unthinkable for the latter: they establish another order, another partition of the perceptible, by constituting themselves not as warriors equal to other warriors but as speaking beings sharing the same properties as those who deny them these. They thereby execute a series of speech acts that mimic those of the patricians: they pronounce imprecations and apotheoses; they delegate one

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Peter Hallward

of their number to go and consult *their* oracles; they give themselves representatives by rebaptizing them. In a word, they conduct themselves like beings with names. Through transgression, they find that they too . . . are endowed with speech that does not simply express want, suffering, or rage, but intelligence.³¹

The plebs managed to repartition the regime of the sensible. Is this an exclusively human power? Though the metaphors of eruption or disruption that Rancière employs may suggest that the political act is "like" a force of nature, his description of the act increasingly takes on a linguistic cast ("disruption" becomes "interruption" and then "disagreement"). It is an "objection to a wrong," where a wrong is defined as the unequal treatment of beings who are equally endowed with a capacity for human speech. When asked in public whether he thought that an animal or a plant or a drug or a (nonlinguistic) sound could disrupt the police order, Rancière said no: he did not want to extend the concept of the political that far; nonhumans do not qualify as participants in a demos; the disruption effect must be accompanied by the desire to engage in reasoned discourse.³²

Despite this reply, I think that even against his will, so to speak, Rancière's model contains inklings of and opportunities for a more (vital) materialist theory of democracy. Consider, for example, the way it imagines the being of the demos: not as a formed thing or fixed entity, but as an unruly activity or indeterminate wave of energy. The demos is, we read, "neither the sum of the population nor the disfavored element within," but an "excess" irreducible to the particular *bodies* involved.³³

This idea of a force that traverses bodies without itself being one resonates with Spinoza's conatus and Deleuze's notion of (the motility of) intensities, discussed in chapters 2 and 4, respectively. Does not the protean "excess" that Rancière invokes flow through nonhuman bodies? Might not this be what the *New York Times* was pointing to by saying that the grid "lives and dies by its own rules"? (Or what is intuited in phrases like "the war has a momentum of its own"?) Rancière implicitly raises this question: Is the power to disrupt really limited to human speakers?

A second opportunity for a more materialist theory of democracy arises when Rancière chooses to define what counts as political by what effect is generated: a political act not only disrupts; it disrupts in such

a way as to change radically what people can "see": it repartitions the sensible; it overthrows the regime of the perceptible. Here again the political gate is opened enough for nonhumans (dead rats, bottle caps, gadgets, fire, electricity, berries, metal) to slip through, for they also have the power to startle and provoke a gestalt shift in perception: what was trash becomes things, what was an instrument becomes a participant, what was foodstuff becomes agent, what was adamantine becomes intensity. We see how an animal, plant, mineral, or artifact can sometimes catalyze a public, and we might then see how to devise more effective (experimental) tactics for enhancing or weakening that public. It feels dangerous to leave the gate open, for it renders many conceptual, moral, and psychological possessions exposed and vulnerable. It seems safer to figure eruptive events as argumentative utterances.

It is, of course, quite normal for democratic theory to be anthropocentric and quite reasonable to tie political participation to some degree of linguistic or deliberative competence.³⁴ These tendencies have directed democratic theorists toward important problems: the uninformed voter and a scarcity of deliberative forums, the unequal access of different human groups to political power, the harm caused when we fail to discern not just established constituencies but also what William Connolly has described as those protean identities emerging from inarticulate "currents of experience."³⁵

But what if we loosened the tie between participation and human language use, encountering the world as a swarm of vibrant materials entering and leaving agentic assemblages? We might then entertain a set of crazy and not-so-crazy questions: Did the typical American diet play any role in engendering the widespread susceptibility to the propaganda leading up to the invasion of Iraq? Do sand storms make a difference to the spread of so-called sectarian violence? Does mercury help enact autism? In what ways does the effect on sensibility of a video game exceed the intentions of its designers and users? Can a hurricane bring down a president? Can HIV mobilize homophobia or an evangelical revival? Can an avian virus jump from birds to humans and create havoc for systems of health care and international trade and travel?

Though Rancière objects to the "Platonic" prejudice against the demos, which positions commoners as defective versions of men in possession of logos, to imagine politics as a realm of human activity

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Olivia Pease

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alone may also be a kind of prejudice: a prejudice against a (nonhuman) multitude misrecognized as context, constraint, or tool. A vital materialist theory of democracy seeks to transform the divide between speaking subjects and mute objects into a set of differential tendencies and variable capacities. I think this is also what Darwin and Latour were trying to do when they told their worm stories.

A Diet of Worms

As our ability to detect and translate the more subtle forms of animal behavior and communication has grown, so, too, has our willingness to attribute intelligence to it and to recast it from behavior to action. But to truly take worms seriously, we would not only have to revise our assessment of their activities but also need to question our larger faith in the uniqueness of humans and to reinvent concepts now attached to that faith.³⁶ Theories of democracy that assume a world of active subjects and passive objects begin to appear as thin descriptions at a time when the interactions between human, viral, animal, and technological bodies are becoming more and more intense. If human culture is inextricably enmeshed with vibrant, nonhuman agencies,³⁷ and if human intentionality can be agentic only if accompanied by a vast entourage of nonhumans,³⁸ then it seems that the appropriate unit of analysis for democratic theory is neither the individual human nor an exclusively human collective but the (ontologically heterogeneous) "public" coalescing around a problem.³⁹ We need not only to invent or reinvoke concepts like conatus, actant, assemblage, small agency, operator, disruption, and the like but also to devise new procedures, technologies, and regimes of perception that enable us to consult nonhumans more closely, or to listen and respond more carefully to their outbreaks, objections, testimonies, and propositions. For these offerings are profoundly important to the health of the political ecologies to which we belong.

Of course, to acknowledge nonhuman materialities as participants in a political ecology is not to claim that everything is always a participant, or that all participants are alike. Persons, worms, leaves, bacteria, metals, and hurricanes have different types and degrees of power, just as different persons have different types and degrees of power, different

worms have different types and degrees of power, and so on, depending on the time, place, composition, and density of the formation. But surely the scope of democratization can be broadened to acknowledge more nonhumans in more ways, in something like the ways in which we have come to hear the political voices of other humans formerly on the outs: "Are you ready, and at the price of what sacrifice, to live the good life together? That this highest of moral and political questions could have been raised, for so many centuries, by so many bright minds, for *human only* without the nonhumans that make them up, will soon appear, I have no doubt, as extravagant as when the Founding Fathers denied slaves and women the vote."⁴⁰

species that are both values in themselves and instrumental values for human needs.”³¹ If I live not as a human subject who confronts natural and cultural objects but as one of many conative actants swarming and competing with each other, then frugality is too simple a maxim. Sometimes ecohealth will require individuals and collectives to back off or ramp down their activeness, and sometimes it will call for grander, more dramatic and violent expenditures of human energy. I know that this last point is pitched at a very high level of abstraction or generality (as maxims must be, I suppose). And I know that more needs to be said to specify the normative implications of a vital materialism in specific contexts. I am, for now, at the end of my rope. So I will just end with a litany, a kind of Nicene Creed for would-be vital materialists: “I believe in one matter-energy, the maker of things seen and unseen. I believe that this pluriverse is traversed by heterogeneities that are continually *doing things*.³² I believe it is wrong to deny vitality to nonhuman bodies, forces, and forms, and that a careful course of anthropomorphization can help reveal that vitality, even though it resists full translation and exceeds my comprehensive grasp.³³ I believe that encounters with lively matter can chasten my fantasies of human mastery, highlight the common materiality of all that is, expose a wider distribution of agency, and reshape the self and its interests.”

Notes

Preface

1. “The partition of the sensible is the cutting-up of the world and of world . . . a partition between what is visible and what is not, of what can be heard from the inaudible.” Rancière, “Ten Theses on Politics.”
2. Rancière claims that “politics in general is about the configuration of the sensible,” meaning that politics consists in the contestation over just what is “the given.” It is “about the visibilities of the places and abilities of the body in those places” (Rancière, “Comment and Responses”). I agree that politics is the arranging and rearranging of the landscape that humans can sense or perceive, but I, unlike Rancière, am also interested in the “abilities” of nonhuman bodies—of artifacts, metals, berries, electricity, stem cells, and worms. I consider Rancière’s theory of democracy in chapter 7.
3. Bergson, *Creative Evolution*, 45.
4. Latour, *Politics of Nature*, 237.
5. On this point Latour says that the phrase *name of action* is more appropriate than *actant*, for “only later does one deduce from these performances a competence” (Latour, *Pandora’s Hope*, 303, 308).
6. Deleuze and Guattari, *Thousand Plateaus*, 351–423.
7. Spinoza, preface to *Ethics*, 102–3.

8. Deleuze, *Expressionism in Philosophy*, 67.
9. Serres, *Birth of Physics*.
10. As Michael Saler notes, enchantment, at least since the Middle Ages, has "signified both [human] 'delight' in wonderful things and the potential to be placed under *their* spell, to be beguiled" (Saler, "Modernity, Disenchantment, and the Ironic Imagination," 138; my emphasis).
11. Deleuze and Guattari, *Thousand Plateaus*, 257.
12. Cole, "Affective Literacy," 5–9.
13. See Derrida, "The Animal That Therefore I Am (More to Follow)."
14. Adorno, *Negative Dialectics*, 14. I discuss Adorno's clownishness in chapter 1.
15. Bruno Latour describes this as treating people and things "symmetrically." For a good account of this, see Crawford, "Interview with Bruno Latour."
16. Brown, *Regulating Aversion*, 11, 203.
17. "Justification is not to be confused with motivation. The current imperial policies of the United States are wrought from power-political motivations that have little to do with the . . . discourses I have been discussing here" (Brown, *Regulating Aversion*, 175n251).
18. See Sargisson, *Utopian Bodies*.
19. See Dean, *Publicity's Secret*, for a good example of demystification at work. It is in the context of assessing the political power of Slavoj Žižek's work that she asks: "If all we can do is evaluate, critique, or demystify the present, then what is it that we are hoping to accomplish? Perhaps we can start and lay the groundwork for revealing the limits of communicative capitalism, to think the unthought of the present, in order to free ourselves for a new possibility. And if Žižek can use his celebrity to work toward this goal, than all the better, right?" (http://jdeanicate.typepad.com/i_cite/2005/05/what_is_the_unt.html; accessed 18 February 2009).
20. Foucault, "Confinement, Psychiatry, Prison," 209.
21. Diana Coole offers a history of this motif in *Negativity and Politics*.
22. For a good discussion of the place of the notion of active materiality in historical materialism, see Diana Coole's contribution to Coole and Frost, *New Materialism*.
23. Adorno, *Negative Dialectics*, 183.
24. Darwin, *Formation of Vegetable Mould*, 305.

1. The Force of Things

Sections of this chapter appeared previously as "The Force of Things: Steps toward an Ecology of Matter," *Political Theory* 32, no. 3 (2004).

1. There is too much good work in feminist theory, queer studies, and cul-

- tural studies to cite here. The three volumes of Feher, Naddaff, and Tazi, *Fragments for a History of the Human Body*, offer one map of the terrain. See also Rahman and Witz, "What Really Matters?"; Butler, *Bodies That Matter*; Butler, "Merely Cultural"; Brown, *States of Injury*; Ferguson, *Man Question*; and Gatens, *Imaginary Bodies*.
2. Mitchell, *What Do Pictures Want*, 156–57.
3. Spinoza, *Ethics*, pt. 3, proposition 6.
4. Mathews, *For Love of Matter*, 48.
5. Spinoza, *Ethics*, pt. 4, proposition 37, scholium 1.
6. *Ibid.*, 4, preface.
7. Spinoza links, in this famous letter, his theory of conatus to a critique of the notion of human free will: "Now this stone, since it is conscious only of its endeavor [conatus] and is not at all indifferent, will surely think that it is completely free, and that it continues in motion for no other reason than it so wishes. This, then, is that human freedom which all men boast of possessing, and which consists solely in this, that men are conscious of their desire and unaware of the causes by which they are determined" (Spinoza, *The Letters*, epistle 58). Hasana Sharp argues that the analogy between humans and stones "is not as hyperbolic as it seems at first glance. For Spinoza, all beings, including stones, . . . include a power of thinking that corresponds exactly to the power of their bodies to be disposed in different ways, to act and be acted upon. . . . Likewise every being, to the extent that it preserves its integrity amidst infinitely many other beings, as a stone surely does, is endowed with . . . a desire to . . . preserve and enhance its life to the extent that its nature allows" (Sharp, "The Force of Ideas in Spinoza," 740).
8. Levene, *Spinoza's Revelation*, 3. Yitshak Melamed goes further to say that "since the doctrine of the conatus . . . provide[s] the foundations for Spinoza's moral theory, it seems likely that we could even construct a moral theory for hippopotamuses and rocks" (Melamed, "Spinoza's Anti-Humanism," 23n59).
9. De Vries, introduction to *Political Theologies*, 42.
10. *Ibid.*, 6.
11. De Vries seems to affirm this association when he wonders whether Baruch Spinoza's picture of interacting, conatus-driven *bodies* could possibly account for the creative emergence of the new: "It would seem that excess, gift, the event . . . have no place here" (de Vries, introduction to *Political Theologies*, 22). Why? Because the only plausible locus of creativity is, for de Vries, one that is "quasi-spiritual," hence Spinoza's second attribute of God/Nature, that is, *thought* or ideas. But what if materiality itself harbors creative vitality?
12. Gould, *Structure of Evolutionary Theory*, 1338.

Office of the White House Press Secretary, "Remarks by President and Mrs. Bush"); "The more free the Iraqis become, the more electricity is available, the more jobs are available, the more kids that are going to school, the more desperate these killers become, because they can't stand the thought of a free society. They hate freedom. They love terror" (United States, Office of the White House Press Secretary, "President Bush, Ambassador Bremer Discuss Progress in Iraq").

24. Canguilhem, *Aspects du vitalisme*, 121.
25. Sumner, Review of *The History and Theory of Vitalism*.
26. Deleuze and Guattari, *Thousand Plateaus*, 255.
27. Althusser, "Underground Current of the Materialism of the Encounter," 190.
28. Serres, *Birth of Physics*.
29. "Executive Summary" in U.S. Department of Health and Human Services, "Stem Cells," 9; my emphasis.
30. For a discussion of Bergson and the open whole, see Marrati, "Time, Life, Concepts."
31. Emerson, *Journals and Miscellaneous Notebooks*, 10:335.
32. Johann Gottfried von Herder, "God: Some Conversations" (1787), qtd. in Zammito, *Genesis of Kant's Critique of Judgment*, 244.

7. Political Ecologies

1. Darwin, *Formation of Vegetable Mould*, 313. Further references to this title will be made in the running text.
2. These "small agencies" ought not to be "undervalued" simply because they are undesigned (ibid., 2).
3. In the sixteenth century, a miller was put on trial for heresy for a similarly materialist view, as Carlo Ginzburg recounts in his *The Cheese and the Worms*. God did not create the world out of nothing at all, Mennochio opined, for in the beginning, "all was chaos, that is, earth, air, water, and fire were mixed together; and out of that bulk a mass formed—just as cheese is made out of milk—and worms appeared in it, and these were the angels. . . . among that number of angels, there was also God, he too having been created out of that mass at the same time" (6).
4. The story is told in Latour, *Pandora's Hope*, chap. 2; the quotation is from page 53.
5. Ibid., 76.
6. Deleuze and Guattari, *Thousand Plateaus*, 324–25.
7. Levine, *Darwin Loves You*, 150.
8. Lorimer, "Nonhuman Charisma." Lorimer notes that "jizz" has affinities

with what Deleuze and Guattari term "a 'singularity' — the congealing of a particular mode of individuation" (915). The article offers a rich account of the degrees of "detectability" (for us) of different bodies.

9. Jullien, *Propensity of Things*, 113, 115. Unlike the European system of assigning to each sound a note or symbol on a written score, "Chinese musical notation does not indicate the sounds themselves . . . but simply the precise gesture required to produce them" (116).
10. Johnson, *Emergence*, 18. In contrast both to simple systems with linear causality and to giant systems best described in terms of statistical probability, systems of "organized complexity" are marked by self-organizing patterns created from the bottom up, where no single element plays the role of a central or higher authority. There is no "pacemaker," only a creative "swarm." Organized complexity produces outcomes that are "emergent," that is, do not issue from either a consummate central agent or an automatic process.
11. Noortje Marres notes that for Dewey (and also Walter Lippmann), the "public is precisely not a social community. . . . those who are jointly implicated in the issue must organize a community. What the members of the public share is that they are all affected . . . , but they do not already belong to the same community" (Marres, "Issues Spark a Public into Being," 214).
12. "The ramification of the issues . . . is so wide and intricate, the technical matters involved are so specialized, the details are so many and so shifting, that the public cannot for any length of time identify and hold itself. It is not that there is no public, . . . there are too many publics" (Dewey, *Public and Its Problems*, 137).
13. A public "consists of all those who are affected by the indirect consequences of transactions to such an extent that it is deemed necessary to have those consequences systematically cared for" (ibid., 16).
14. Ibid., 137.
15. Dewey, *Art as Experience*, 59.
16. "Humans, for millions of years, have extended their social relations to other actants with which, with whom, they have swapped many properties, and with which, with whom, they form collectives" (Latour, *Pandora's Hope*, 198). Latour says in that book that he rejects the category of "Nature" (as a pure realm devoid of human culture), because such an idea "renders invisible the political process by which the cosmos is collected in one livable whole" (304). I would emphasize that it is equally important to reject the idea of passive matter, because that renders invisible the material agencies at work in a polity.
17. "Action is not what people do, but is instead the 'fait-faire,' the making-do, accomplished along with others in an event, with the specific opportuni-

- ties provided by the circumstances. These others are not ideas, or things, but nonhuman entities, or . . . *propositions*" (ibid., 288; my emphasis).
18. Ibid., 288.
 19. Ibid., 247. But this fermentation seems to require some managing to ensure, for example, that all the ingredients are in the pot. It seems to require humans to exercise this "executive" function.
 20. "Whenever we make something we are not in command, we are slightly overtaken by the action: every builder knows that." And, likewise, the momentum of nonhumans is also slightly overtaken by "the *clinamen* of our action" (ibid., 281).
 21. Dewey, *Public and Its Problems*, 16.
 22. A democratic collective is one "which brings together starts, prions, cows, heavens, and people . . . into a 'cosmos' instead of an 'unruly shambles'" (Latour, *Pandora's Hope*, 261).
 23. "The most urgent concern for us today," says Latour, "is to see how to fuse together humans and non-humans in the same hybrid forums and open, as fast as possible, this Parliament of things" (Latour, "What Rules of Method"). Kevin Murray notes that the suggestion to include nonhuman voices at first provokes "the medieval comedy of endangered Amazonian forests tapping microphones to be heard above the bellowing megafauna. Yet, such a mind change is necessary if the planet is not to be speedily consumed by the interests of short-term capital" (Murray, "Cabinet of Helmut Lueckenhausen," 19).
 24. "I call the distribution of the sensible the system of self-evident facts of sense perception that simultaneously discloses the existence of something in common and the delimitations that define the respective parts and positions within it. A distribution of the sensible therefore establishes at one and the same time something common . . . and exclusive parts. . . . The distribution of the sensible reveals who can have a share in what is common to the community based on what they do and on the time and space in which this activity is performed. . . . There is . . . an 'aesthetics' at the core of politics that has nothing to do with Benjamin's discussion of the 'aestheticization of politics.' . . . This aesthetics . . . can be understood . . . as the system of a priori forms determining what presents itself to sense experience. It is a delimitation of spaces and times, of the visible and invisible, of speech and noise. . . . Politics revolves around what is seen and what can be said about it, around who has the ability to see and the talent to speak, around the properties of spaces and the possibilities of time" (Rancière, *Politics of Aesthetics*, 12–13).
 25. Rancière, *Disagreement*, 99.
 26. Rancière and Panagia, "Dissenting Words," 125.
 27. Rancière, *Disagreement*, 33. Democracy is the "staging of the very contra-

- diction between police logic and political logic," as when the feminist Jeanne Deroin presented herself, in 1849, "as a candidate for a legislative election in which she cannot run" (41).
28. "One does not practice democracy except under the form of these *mise-en-scènes* that reconfigure the relations of the visible and the sayable" (Rancière and Panagia, "Dissenting Words," 125).
 29. Rancière, *Disagreement*, 79. Democracy happens when the incommensurability between "the order of the inequalitarian distribution of social bodies" and "the order of the equal capacity of speaking beings in general" becomes visible (42).
 30. Ibid., 99.
 31. Ibid., 24–25. The plebes forced the patricians to relate to them as if they had intelligence, as if they were worthy of discoursing with. The plebs erected "a sphere for the name of the people to appear," carving out "in the heart of the city [a] . . . place where liberty is to be exercised, . . . where the power of the demos that brings off the part of those who have no part is to be exercised" (66).
 32. I posed the question to Rancière at a conference engaging his work. It was called "Fidelity to the Disagreement" and was sponsored by the Post-structuralism and Radical Politics group of the British Political Studies Association, held at Goldsmiths College, London, 16–17 September 2003.
 33. Rancière and Panagia, "Dissenting Words," 124.
 34. For Mark Warren, for example, participation in the (voluntary) associations he says are central to a democratic culture depends on a fluency in "talk, normative agreement, cultural similarity, and shared ambitions—that is, forms of communication that are rooted in speech, gesture, self-presentation" (Warren, *Democracy and Association*, 39).
 35. Connolly, *Pluralism*, 76. Connolly also describes the politics of "enactment" through which "new identities are forged out of old differences, injuries, and energies" in *The Ethos of Pluralization* (xiv). Unlike Rancière, Connolly emphasizes the interdependence between new drives to pluralization (new entrants into the demos) and existing pluralist settlements.
 36. According to the *Encyclopaedia Britannica*, the Diet of Worms was "a meeting of the Diet (assembly) of the Holy Roman Empire held at Worms, Germany, in 1521 that was made famous by Martin Luther's appearance before it to respond to charges of heresy" (online edition, <http://www.britannica.com>).
 37. Are they "agencies" or "agents"? As I struggle to choose the right term, I confront a profound ambiguity in both terms regarding wherein lies the cause and wherein the effect.
 38. It might even be said that humans need nonhumans to function more than nonhumans need humans, for many nonhumans—from a can rusting at

the bottom of a landfill to a colony of spores in the Arctic—fester or live beyond the proximity of humans.

39. A public is what Karen Barad describes as an “intra-action” of humans and nonhumans: she coins the term “to signify the inseparability of ‘objects’ and ‘agencies of observation’ (in contrast to ‘interaction,’ which reinscribes the contested [subject-object] dichotomy)” (Barad, “Scientific Literacy,” 232).
40. Latour, *Pandora’s Hope*, 297.

8. Vitality and Self-interest

1. I take the phrase “fatalistic passivity” from Félix Guattari: “The increasing deterioration of human relations with the socius, the psyche and ‘nature,’ is due not only to environmental and objective pollution but is also the result of a certain incomprehension and fatalistic passivity towards these issues as a whole, among both individuals and governments. Catastrophic or not, negative developments [evolutions] are simply accepted without questions. . . . We need to ‘kick the habit’ of sedative discourse” (Guattari, *Three Ecologies*, 41; brackets in original).
2. “‘Blowback’ is a CIA term first used in March 1954 in a recently declassified report on the 1953 operation to overthrow the government of Mohammed Mossadegh in Iran. It is a metaphor for the unintended consequences of the U.S. government’s international activities that have been kept secret from the American people. The CIA’s fears that there might ultimately be some blowback from its egregious interference in the affairs of Iran were well founded. Installing the Shah in power brought twenty-five years of tyranny and repression to the Iranian people and elicited the Ayatollah Khomeini’s revolution. The staff of the American embassy in Teheran was held hostage for more than a year. This misguided ‘covert operation’ of the U.S. government helped convince many capable people throughout the Islamic world that the United States was an implacable enemy” (Johnson, “Blowback”).
3. Nature writers such as Barry Lopez and Wendell Berry have also found the category of “environment” wanting: it is for them unable to express the beautiful complexity of nonhuman nature or the degree of our intimacy with it. Though they also seek to cultivate an enhanced attentiveness to the out-side, they do not go as far as I do in playing up the essential role of the nonhuman in the human.
4. See Mathews, *For Love of Matter*; Latour, *Politics of Nature*; Haraway, *How Like a Leaf*; Hawkins, *Ethics of Waste*; Ingold, *The Perception of the Environment*; Hayles, *How We Became Posthuman*; Barad, *Meeting the Universe*

- Halfway*; Whatmore, “Materialist Returns”; Bingham and Hinchliffe, “Re-constituting Natures”; Ihde, *Postphenomenology and Technoscience*; and Mitchell, *What Do Pictures Want*.
5. Wade, “Bacteria Thrive in Crook of Elbow.”
 6. Guattari, *Three Ecologies*, 28. He speaks of “social ecology, mental ecology and environmental ecology” (41).
 7. *Ibid.*, 27.
 8. *Ibid.*, 38.
 9. See, for example, Luke, *Capitalism, Democracy, and Ecology*; and Luke, *Eco-critique*.
 10. Guattari, *Three Ecologies*, 51.
 11. The environmentalist Scott Russell Sanders, for example, makes the same point in “Stillness”: “We need to resist attacks on air, soil, water, and wild lands. But we also need to change our culture, not just our leaders and technology. We need to speak out and act for more conserving, more sustainable, more peaceful, and more just practices in our homes, our workplaces, our schools, and our public assemblies. We must refuse to shut up, refuse to give up, in the face of corporate consumerism and a mass culture peddling the narcotics of entertainment. We need to articulate and demonstrate a more decent and joyous way of life” (5).
 12. “*The Trinity is One*. We do not confess three Gods, but one God in three persons, the ‘consubstantial Trinity.’ The divine persons do not share the one divinity among themselves but each of them is God whole and entire.” And yet, “*The divine persons are really distinct from one another*. ‘God is one but not solitary.’ ‘Father,’ ‘Son,’ ‘Holy Spirit’ are not simply names designating modalities of the divine being, for they are really distinct from one another: ‘He is not the Father who is the Son, nor is the Son he who is the Father, nor is the Holy Spirit he who is the Father or the Son.’ . . . The divine Unity is Triune” (“The Dogma of the Holy Trinity”; emphasis added).
 13. Guattari, *Three Ecologies*, 41–42.
 14. Latour, “It’s the Development, Stupid,” 6–7.
 15. “Second Nature” was the title of the 2007 Graduate Student Conference in Political Theory at Northwestern University. For papers from this conference, see Archer, Maxwell, and Ephraim, eds., *Second Nature*.
 16. Latour, *Politics of Nature*, 12.
 17. Guattari, *Three Ecologies*, 68.
 18. *Ibid.*, 66–67. Latour echoes Guattari’s advocacy of an active, energetic, and pro-technological greening. This call to arms is also at the heart of Shellenberger and Nordhaus, *Break Through*, the book to which Latour is responding in “It’s the Development, Stupid.” *Break Through* argues that environmentalism is inadequate to the new ecological crises. Overcoming