New Materialism and the Nonhuman Story

Chapter · September 2021

DOI: 10.1017/9781009039369.020

1 author:

Serpil Oppermann
Cappadocia University
63 PUBLICATIONS **1,072** CITATIONS

SEE PROFILE

CHAPTER 19

New Materialism and the Nonhuman Story

Serpil Oppermann

This chapter presents a brief genealogy of new materialism and examines the significance of the nonhuman stories it allows us to hear and tell. Those stories are now entangled in the ethical, political, scientific and theoretical complexities of the Anthropocene and crucial to the Environmental Humanities (EH). New materialism and EH inhabit each other with a range of commonalities, including bioethical, sociocultural, and scientific questions that arise from the challenges of Anthropocene quandaries (climate change, toxic bodies, postnatural places, multispecies tragedies, threats of extinctions, and posthuman futures). With their "pluralizing recourse"[1] to overlapping discourses, new materialism and EH converge on ecologically engaged collaborative thinking in responding to these challenges within the context of transdisciplinary knowledge practices.

EH can be envisioned as a "common stream" into which "distinct disciplinary currents"[2] flow. Among them, new materialism is the most notable because it emphasizes the politics and poetics of living matter, describing "how living matter structures natural and social worlds,"[3] and prompting a "material-semiotic means of relating"[4] to the world. The interdisciplinary space between the new materialist thought and EH is quite porous. They each share the same goal, as Iris van der Tuin contends, of "the break-through of the schism between sign/culture/ language and referent/nature/ matter." What "this would entail," she avers, is "revitalizing ontology as the element that has seemingly become lost under the paradigm of representationalism."[5]

New materialism is often understood as part of a larger "material turn," or as part of a renewed philosophical attention to the nonhuman, broadly understood as organic systems (from animals and plants to microorganisms) and inorganic systems, which include all forms of materiality, such as planetary ecosystems, geophysical processes, xenobiotic substances, technological objects, elements, and subatomic particles. The term "nonhuman turn" is imbricated with the material turn as it "implies a movement in

academic circles toward appreciating new materialisms."[6]According to Richard Grusin, the nonhuman turn is a "macroscopic concept" that overlaps with "a number of different theoretical or critical 'turns.'"[7] More recently, Christopher Peterson has argued that the nonhuman turn "does not so much name a singular doctrine or movement as it does a broad theoretical reorientation that aims to shift our attention toward a concern for nonhuman alterity."[8] These "turns" are interlaced and often used interchangeably, but their shared commitment to decentering the human subject allows us to see what is most generative and productive in new materialism: a radical "shift of attention" toward "nonhumanness that is in all of us."[9]

Broadly speaking, new materialism reimagines our species through our relations with the multispecies world and our bodily interconnections with vital materialities, conceptualized by Stacy Alaimo as "trans-corporeality,"[10] while simultaneously dismantling human exceptionalism by claiming that we are always already more-than-human. The human microbiome, for example, is alive with billions of bacteria, fungi, archea, and viruses that make us interspecies beings. New materialism's orientation toward the nonhuman extends through the critical work of much posthumanist and material ecocritical scholarship and is a pivotal node in the research networks of EH. The emphasis on the nonhuman gathers into new materialist methods other theories as well, such as ecomaterialism, material feminisms, elemental ecocriticism, actor–network theory (ANT), object-oriented ontology, speculative realisms, biosemiotics, and thing theory, which all "seek a repositioning of the human among nonhuman actants."[11] A major point of convergence between all of these critical schools is to sustain a shift toward nonbinary modes of thought, to establish environmental justice, and to effect ethical accountability in a postanthropocentric world marked by "the indeterminate conditions of environmental damage."[12]

New Materialism(s)

At the outset, new materialism is known for its radical reconceptualization of key concepts like "agency" and "matter, "human" and "nonhuman," carried beyond their conventional definitions, but above all for its contestation of the linguistic turn without, however, ignoring the insights of poststructuralist and postmodern theories (associated with the work of Jacques Derrida, Michel Foucault, Jean-François Lyotard, Gilles Deleuze, Felix Guattari, Judith Butler, and Linda Hutcheon, among others) that

dominated intellectual debates in the humanities and social sciences from the 1970s to the 1990s. Taking its brief from the postmodern and poststructuralist critique of persistent Cartesian dualisms in humanist traditions, new materialism was able to formulate a more effective disanthropocentric theoretical position situated in a relational ontology of *naturalcultural*[13] meanings and processes. In the following sections, I describe the relationship of new materialism to poststructuralism and postmodernism, the two major theoretical schools that have dominated how humanists approach texts, and world-as-text. Understanding this relationship will situate new materialism in still-vital critical debates, but also foreground how new materialism can advance a rich, interdisciplinary EH practice without abandoning critiques of power or language.

The two "posts" – postmodernism and poststructuralism – have helped new materialist scholars forge novel modes of analysis in which nature and culture, reality and textuality are not viewed as binary oppositions. To this end, new materialism has espoused the postmodern and poststructuralist disclosure of the link between the dualistic conceptions of the world and the traditional realist systems of representation. In terms of evaluation, new materialism has accommodated these two posts' negation of realist epistemology, which assumes that language can accurately represent its referent; in other words, it presumes a "natural" link between word and world. The subversion of representationalism, however, has entailed endless debates about cultural constructivism, which insists that nature is a discursive, or a cultural, construct. Although postmodernism decisively challenged the realist conviction that language provides unmediated access to reality, it was held accountable for the extreme constructivist assumption that nature is nothing but a discursive construction. Postmodernism, however, does not claim to erase the referent itself, nor does it devalue "the referential dimension of language."[14]

The postmodern denaturalization of realism's assumed transparency has often been confused (particularly in ecocritical circles) with reducing reality to linguistic constructivism. Taken as a motto, Kate Soper's famous statement that language does not have a hole in the ozone layer[15] exemplifies the early ecocritical assaults on postmodernism. But let us recall that the anthropocentric conceptions of nature are formulated through epistemological realism, not through postmodernism.[16] In essence, this causal-realist epistemology is saturated in the Cartesian worldview, with its fragmented, dualistic approach to reality which, as physicist Henry P. Stapp explains, "has exerted an enormous influence on philosophy, and a corrosive influence on the philosophical foundations of human

values."[17] Fighting to diminish this influence has always been the central preoccupation of postmodernism, which has also contested the extreme textualist view of reality, advocating instead relationality, contextuality, heterogeneity, and multiperspectival inquiry.

This theoretical move began with denaturalizing what Roland Barthes has called the "doxa" to name public opinion or "voice of nature." The initial concern was to "de-doxify"[18] the hegemony of Cartesian thought to point out that what we deem to be doxa, such as the mind/body split, or the nature/culture dichotomy, is not a natural order of life. In fact, what postmodern theory and practice did was to open up possible relations between nature and culture, and discourse and materiality, which is what new materialism has followed through and consolidated by emphasizing their coconstitution. Karen Barad's theory – "agential realism," in particular – is central to this perspective, most conspicuously expressed in her proclamation that "Discursive practices and material phenomena do not stand in relation of externality to one another: rather, they are mutually implicated."[19]

With the work of other leading theorists – such as Bruno Latour, Andrew Pickering, Manuel DeLanda, Brian Massumi, Donna Haraway, Jane Bennett, David Abram, Stacy Alaimo, Nancy Tuana, Vicki Kirby, Elizabeth Gross, Timothy Morton, Jeffrey J. Cohen, Iris van der Tuin, Claire Colebrook, Rosi Braidotti, Cecilia Åsberg, Susan Hekman, Diana Coole, and Samantha Frost – new materialisms (in the plural) today celebrate symbiotic relations in life's entanglements in which the human and the nonhuman are understood to be ontologically inseparable and the animate/inanimate distinction to be dissoluble. This approach has radically disrupted the conventional conceptualizations of materiality and ultimately managed to install and reinforce a compelling theory of agency that enables a denaturalizing critique of its traditional models linked with purposive human conduct. And, in addition, it has subverted the "Anthropos" of the Anthropocene[20] (the human epoch), which privileges a disembodied male subject representing all humanity as an overpowering geological force and underwrites an anthropocentric arrogance. Insisting on the agentic potency of all that is more-than-human, new materialisms have made the agentic and semiotic properties of matter the center of critical attention, especially in the EH.

In this vision, material agencies, discursive practices and natural and cultural processes are not perceived in separate categories but in their complementary roles in the configuration of the world and its meanings. All this implies "a renewed understanding of the relationship among ontology, epistemology, ethics, and politics."[21]

Barad's proposal of "ethico-onto-epistemology"[22] is the optimum philosophical framework for this understanding and serves as the basis of new materialist theory as it invalidates the pretensions of anthropocentric thought by recontextualizing humanity within the wider world of environmental intra-actions, assemblages, and porosities. Drawing on quantum physics' radical rethinking of matter at the most fundamental level, Barad's *Meeting the Universe Halfway* (2007) provides a sustainable model to think human and nonhuman relations through a nonmastering vision. Since then, new materialist scholarship has exploded with highly influential monographs and edited collections, such as Stacy Alaimo and Susan Hekman's *Material Feminisms* (2008), Jane Bennet's *Vibrant Matter: A Political Ecology of Things* (2010), David Abrams' *Becoming Animal: An Earthly Cosmology* (2010), Stacy Alaimo's *Bodily Natures*: *Science, Environment, and the Material Self* (2010), Diana Coole and Samantha Frost's *New Materialisms: Ontology, Agency, and Politics* (2010), Lambros Malafouris and Colin Renfrew's *The Cognitive Life of Things* (2010), Vicki Kirby's *Quantum Anthropologies: Life at Large* (2011), Levi Bryant's *The Democracy of Objects* (2011), Levi Bryant, Nick Srnicek, and Graham Harman's *The Speculative Turn: Continental Materialism and Realism* (2011), Iris van der Tuin and Rick Dolphijn's *New Materialism* (2012), Ian Bogost's *Alien Phenomenology: Or, What It's Like to Be a Thing* (2012), Jeffrey J. Cohen's *Animal, Vegetable, Mineral: Ethics and Objects* (2012), Lambros Malafouris' *How Things Shape the Mind: A Theory of Material Engagement* (2013), Eduardo Kohn's *How Forests Think: Toward an Anthropology Beyond the Human* (2013),William E. Connolly's *The Fragility of Things* (2013), and Jeffrey J. Cohen's *Stone: An Ecology of the Inhuman* (2015), to name just a few.

In these and many other publications that embrace the same shifting of perspective, a central argument is that if we understand how discursive practices and material phenomena are mutually constitutive in the entwined zones of ecological processes and social systems, we can "formulate an ethics and politics that can respond to the ecological challenges we are facing in the age of the Anthropocene."[23] Moreover, such an approach emancipates knowledge practices from both constructivist and anthropocentric/representationalist moorings, and enables us to rethink our being-in-the-world and other species in more ecologically responsible and unprejudiced ways so as to have a sustainable present and a livable future. It is in this climate that new materialisms promote matter's vitality, agency, and dynamism, as opposed to the traditional idea of matter as passive stuff.

Simply put, for new materialism, matter in every form is agentic and capable of producing meaning beyond the meaning ascribed to it by human actors. The concept of agency here is redefined in larger nonhuman patterns beyond its associations with human intelligence, perception, and intentionality. Agency now refers to the "transformative capacity"[24] all material forms and processes possess; or, in Jane Bennett's terms, agency is "that which has efficacy, can *do* things, has sufficient coherence to make a difference, produce effects, alter the course of events."[25] For example, material processes such as glaciers, sandstorms, hurricanes, volcanoes, or tsunamis do not have cognitive abilities and intentional behavior as biological life forms do in various degrees (like cells and bacteria), yet they are agentic in the way they "produce effects." For Bennett, this agentic effectivity "becomes distributed across an ontologically heterogeneous field, rather than being a capacity localized in a human body or in a collective produced (only) by human efforts."[26] Matter's agentic capacity, then, is not subject-centered, but is diffused across all planetary entities and forces. According to Barad, too, agency "is not an attribute but the ongoing configuration of the world. The universe is agential intra-activity in its becoming."[27] Consequently, organic and inorganic matter are equipped with generative, transformative powers, intrinsic vitality, *and*, as proposed by material ecocriticism, also with agentic expressions, innate meanings, and inherent creativity. Material ecocriticism has unearthed the entrenched layer of expressivity in agentic matter that has foremost undermined the established credo about storytelling being uniquely all too human, laying bare the storied worlds of biotic and nonbiotic nonhumans.

Nonhuman Stories

The notion of "nonhuman story" marks an important shift in the foundational notions of narrative and storytelling, which are thought to be exclusively human practices. But, even if "storytelling is the most ubiquitous of human activities,"[28] as the new historicist scholar Louis O. Mink claims, humans are not the only species able to generate stories. The human may be by definition the storytelling being, but other species and material agencies also represent or narrate their connections to their environments. The implications of this postulation are far from banal, because if "seeing, representing, and perhaps knowing, even thinking, are not exclusively human affairs,"[29] as Eduardo Kohn affirms, then storying the world is not "all too human." Hence, the stories other beings and material agencies tell (such as jaguars in Kohn's narrative, and discarded

objects in Jane Bennet's *Vibrant Matter*) take us to places of semiotic creativity that permeate our imagination, *and* to places of symbiotic relations that lead us to more-than-human channels of meaning and relation-making.

Everything terrestrial occupies worlds of stories shaped by plurality of voices, lived experiences, particular interconnections, and unflagging encounters with the world's elements, forces, and processes. Being in the world is being storied. As biosemiotician Wendy Wheeler has succinctly stated, "life itself is made of stories."[30] Whether they come as the Aeolian sound of the wind whispering through the trees, the slow-pulsing electrical signals trees use to communicate, the changing color of clouds at night, whale songs, the dance of bees, igneous rocks with memory-ghosts of magmatic violence, and even as garbage that "both bears within it contradictory stories and histories,"[31] or as human stories, the narratives of the world are endless and become knowable through various forms of communications. Narrative here refers both to the story and to the means of telling that story. Narrative, we night also say, is a means of creative becoming enacted in complex networks of signifying forces, manifesting as ontologically hybrid forms of expressions. Narrative is thus re-envisioned as the signifying agency of living matter liberated from its silence, demonstrating the ability to produce meaningful expressions in various assemblages. Traditionally thought to be "the central function or *instance* of the human mind,"[32] or "a form of human comprehension,"[33] as noted earlier, narrative is extended to the more-than-human entities, flows, forces, and substances. Hence, storytelling that goes beyond its traditional recognition as a form of human imposition of meaning and coherence on the world is acknowledged as an *instance* of the material-semiotic world at large. Nonhuman narratives, writes Jeffrey Cohen, "are always animated by multifarious vectors and heterogeneous possibilities not reducible to mere anthropomorphism."[34] Matter configures narratives; it engenders stories. It is in our interests as intelligent planetary beings to develop new strategies of reading this semiotic materiality and to respond attentively to its emergent meanings.

Transmitted through codes, signs, shapes, colors, sounds, gestures, and signals, and emerging "through humans but not entirely because of them,"[35] nonhuman stories may not always be easily identifiable, or immediately recognizable, yet they entail a new understanding of nature as an articulate field of agentic entities, nonhuman beings with purpose. Hence, the lexicon of their narratives impressed with meanings projects an image of the more-than-human world that is never mute and meaningless, but an

expansive field of creative becomings. Geologists, in particular, know that nonhuman stories are real, lively, and present. Marcia Bjornerud, for example, writes that geologists perceive landscapes as a palimpsest wherein "traces of earlier epochs persist in the contours of landforms and rocks beneath, even as new chapters are being written." She further notes how "the secret stories of the past hold up the world, envelop us in the present, and set our path into the future. The past . . . is palpably present in rocks, landscapes, groundwater, glaciers, and ecosystems."[36] To instantiate, glaciers hold archival stories of ancient bacteria, making narratives of epochal time cognizable in human temporality. In the dense layers of volcanic rock lie the magnetic stories of geological ruptures in which the Anthropocene is just a fragment embedded within the planet's geobiochemical annals. The chair of the Anthropocene Working Group of the International Commission on Stratigraphy, Jan Zalasiewicz, observes that "[t]he fossils themselves . . . tell the story of themselves and of their changing world at the end of an era."[37] The stories of extinctions are indeed imprinted in fossils, like the stories of trees in fungi that join trees to intercommunicating forests, and the stories of resilience in deep sea creatures. That's how stories come to matter: volcanoes, hurricanes, deserts, bones, bodies, cells, minerals, objects, and things – nonhumans in every form and assemblage – yield stories of biogeological evolution, entangling times immemorial and life bygone with present times. These nonhuman stories will linger in their narrative density for futures to come, extending the memories, echoes, ecologies, and narratives of deep time to the ever-shifting present. Deep time is the story of the Earth's unceasing journey, from which the poetics of lively matter emerges. Embodied in all physical forms, but not always amenable to ordinary human perception, nonhuman stories also shed light on the unfolding complexities of the Anthropocene. Long after humans are gone, beings that inherit the earth will, for example, discover the ghostly stories of technofossils in the earth's stratigraphic record as evidence for the Anthropocene's geological markers.

Nonhuman stories are always embedded in the folds and fissures of the world, demanding recognition. The logic is simple. If matter is agentic and capable of expressing itself, it must have a narrative dimension; it must be *storied matter*, a living text encoded with meaningful signs and/or creative expressions, which Haraway calls "semiotic materiality"[38] and David Abram "expressive, telluric power."[39] If we are to name this expressive power, which is a feature of signifying material agency, we may call it *narrative agency*, for it yields insights into the way semiotic materiality is. In practice, as Abram reminds us, all beings "have the ability to communicate

something of themselves to other beings,"[40] which is another way of explaining "an ongoing flow of agency through which part of the world becomes differentially intelligible to another part of the world."[41] Material ecocriticism sees this world as a *site of narrativity*, a site where narrative agencies assemble and disseminate meaningful articulations, variously demonstrating their being in the world as well as the insight that each material agency – biological or not – possesses some degree of creative experience. Narrative agencies are the building blocks of storied matter; they signify a nonlinguistic performance inherent in every material formation, from subatomic particles to biological organisms to geophysical forces. Jeffrey Cohen contends that though we are biased about human language being the only means to convey worlds, "the earth possesses numerous devices, repositories for nonlinguistic inscription."[42] And, it is through these nonlinguistic inscriptions that "particular material articulations of the world become meaningful,"[43] which we interpret as nonhuman stories. As Timothy Morton proclaims, "[w]hen we zoom into life forms, we discover textuality," because "script is encoded into matter."[44] In short, expressive creativity makes agentic matter the storied subject of an ever-unfolding earthly tale.

This directs our attention to the thinness of the boundary between storied matter and storied humanity, between the imaginable and the perceptible, the literal and the figurative. What this means is that, if we really understand how the Earth speaks, we can change the way we perceive the world and, consequently, "the politics of our relationship with nonhumans – essentially, one of exploitation."[45] To quote Mink again, "That this implication is surprising should not be surprising."[46] It simply reflects "a different ontology of being and perception, knowledge and justice."[47] Nonhuman stories subtly teach us to relate to the Earth in a noninvasive way, inviting us to think this new relational ontology in terms that do not rely on conventional concepts. Perceptual change indeed necessitates new concepts (e.g. storied matter) to assess the agential and expressive capacities of living matter, which, as Bronislaw Szerszynski has eloquently argued, also has memory. Atmosphere, ocean, rocks, minerals, and ecosystems possess memory. For example, "the atmosphere's memory is improved by being in contact with the ocean and land. It practices its own mnemotechnics, exchanging moisture and heat with them and thereby increasing the length of its memory."[48]

If the atmosphere has memory, it is a narrative agency that speaks via its interactions with the ocean and the land. These interactions make the atmosphere a vast mnemonic device, but when it crosses realms of

experience constructing fluid meanings across time and space and joins with human penchant for telling stories, it becomes storied. Its meanings are located in networks of relationships which produce signifying forces that leave their traces in life. Like the atmosphere, "[a]ll forces and flows (materialities) are, or can become, lively, affective, and signaling."[49] In fact, everything animal, vegetal, or mineral, including elements and forces, experiences "the material-semiotic means of relating"[50] to earthly life. The 3.5-billion-year-old global prokaryotic communication network within and between different bacterial cells[51] is one instance, among many, of material-semiotic interrelations and creative becomings. Moreover, "[i]nsistent objects and energetic matter participate in relation-making, in story."[52] Nonhuman stories are ontologically performed and "differentially enacted" by material agencies in unceasing flows of expressions and carry a signature of time. This is the reason why we read matter as "a living text with rich narrative efficacy . . . exerting its influence in conceptual and material habitats."[53] This vision can inspire us to align our creativity with the expressive Earth communities, compelling us to rethink our storied coexistence and coevolution in the story of the animate earth and to think beyond anthropocentricity. It is a way of making connections between and across species, lively materialities, environments, and inhuman durations. "All we have to do," as Serenella Iovino suggests, "is to heed the tacit voices of the world."[54]

Nonhuman story is also the narrative of symbiosis, multispecies interdependencies, crisscrossings between the biotic and the abiotic, and environmental transformations emerging from the waves of threats posed by the Anthropocene to the webs of life. In the environmental humanities, which foreground "narrative" as a method (although EH does "not advocate methods"[55]), these stories are studied as human–nonhuman assemblages that engage us with "the arts of noticing . . . the multiple, interconnected worlds comprised of different human lifeways and other species who will co-create stories of resurgence that may help us to live convivially together."[56] Addressing the complexities of material networks that cross through world cultures, social and economic practices, political discourses, literary narratives, aesthetics, and ethics, EH commands a rich literature in its exploration of the concerns, themes, and questions in the Anthropocene, and the nonhuman story is always part of these explorations. Because the field wants to reinforce the memory of our contact zones with the nonhuman world at a time of our excessively liberal involvements with it, nonhuman stories are examined as narrative guides to imagine new possibilities for "mutual transformation and

regeneration."[57] Stories are world-makers, and if there is any meaning to be made of them today, it is "collaborative survival in precarious times."[58]

Nonhuman stories in the Anthropocene are also embroiled in the human technosphere, which is reconfiguring the planet to the extent that the Earth's entire life support systems are thrown into disarray – through mining, extraction, and transformation of precious metals and rare minerals; damming rivers for hydropower plants; making oceans acidic; polluting soil, air and water; and through geo- and bio-engineering. These are sites that produce environmental injustices, from species, gender, and ability to class and race. "The harms suffered by ecosystems today," maintains David N. Pellow, "are closed linked to and mirror the harms experienced by the most marginalized human beings across the planet."[59] This is how the more-than-human dramas intertwined with human tragedies draw us to stories of environmental injustices entangling not only disenfranchised humans, but also everything else that is exploitable. As a way of resistance, "thinking with" the environment suggested by EH scholars can help cultivate environmentally just storytelling practices for thinking the human condition, climate crises, species, the Earth's biogeochemical processes, and social issues together.

The nonhuman story in this regard can open our imagination to new ways of storying the world in the sense that we learn to *become with* each other. Acknowledging the more-than-human world in its storied expanse also inspires new human narratives of "intra-active" relatings through which we can redefine life as a gift of world-making with nonhuman agencies. They know well how to "redo ways of living and dying attuned to still possible finite flourishing, still possible recuperation."[60] Conceivably, this new way of knowing and being, and of storying the world, will affect perception and action, bring environmental and social justice to the world, and catalyze better ethical relations with nonhuman agencies.

Further Reading

Askin, Ridvan. *Narrative and Becoming*. Edinburgh: Edinburgh University Press, 2016.

Best, Steven and Douglas Kellner. *Postmodern Theory: Critical Interrogations*. New York: The Guilford Press, 1991.

Blackwell, Mark, ed. *The Secret Life of Things: Animals, Objects, and It-Narratives in Eighteenth-Century England*. Lewisberg: Bucknell University Press, 2007.

Daston, Lorraine, ed. *Things That Talk: Object Lessons from Art and Science*. New York: Zone Books, 2008.

Festa, Lynn. *Sentimental Figures of Empire in Eighteenth-Century Britain and France*. Baltimore: John Hopkins University Press, 2006. (esp. chapter 3: "Tales Told by Things," 111–152).
Heise, Ursula K., Jon Christensen, and Michelle Niemann, eds. *The Routledge Companion to the Environmental Humanities*. New York: Routledge, 2017.
Herman, David. *Narratology beyond the Human: Storytelling and Animal Life*. Oxford: Oxford University Press, 2018.
Kress, John W., and Jeffrey K. Stine, eds. *Living in the Anthropocene: Earth in the Age of Humans*. Washington, DC: Smithsonian Books, 2017.
Oppermann, Serpil and Serenella Iovino, eds. *Environmental Humanities: Voices from the Anthropocene*. London/New York: Rowman & Littlefield, 2017.
Sands, Danielle. *Animals, Plants, Things: Nonhuman Storytelling Between Philosophy and Literature*. Edinburgh: Edinburgh University Press, 2019.
Waugh, Patricia, ed. *An Oxford Guide to Literary Theory and Criticism*. Oxford: Oxford University Press, 2006.

Notes

1. I borrow this expression from Linda Hutcheon, *A Poetics of Postmodernism: History, Theory, Fiction* (New York: Routledge, 1990 [1st ed.: 1988]), 21.
2. Steven Hartman, "Introduction: Naturalizing Culture and Countering Nature in Discourses of the Environment," in *Contesting Environmental Imaginaries: Nature and Counternature in a Time of Global Change*, ed. Steven Hartman (Lieden: Brill, Rodopi, 2017), 1–10, p. 4.
3. Diana Coole and Samantha Frost, "Introducing the New Materialisms," in *New Materialisms: Ontology, Agency, and Politics*, ed. Diana Coole and Samantha Frost (Durham: Duke University Press), 1–43, p. 20.
4. Donna Haraway, *When Species Meet* (Minneapolis: University of Minnesota Press, 2008), p. 26.
5. Iris van der Tuin, "The New Materialist 'Always Already': On an A-Human Humanities," *NORA: Nordic Journal of Feminist and Gender Research* 19.4 (December 2011), 285–290, p. 288.
6. Stephanie LeMenager, "Not Human, Again," *J19: The Journal of Nineteenth-Century Americanists*, 1.2 (Fall 2013), 410–410, p. 402.
7. Richard Grusin, "Introduction," in *The Nonhuman Turn*, ed. Richard Grusin (Minneapolis: University of Minnesota Press, 2015), vii–xxix, p. x.
8. Christopher Peterson, *Monkey Trouble: The Scandal of Posthumanism* (New York: Fordham University Press, 2018), p. 1.
9. Grusin, "Introduction," p. xx.
10. Stacy Alaimo defines trans-corporeality as "interconnections between various bodily natures" in *Bodily Natures: Science, Environment, and the Material Self* (Bloomington: Indiana University Press, 2010), p. 2.
11. Kameron Sanza, "New Materialism(s)," *Genealogy of the Posthuman*, Critical Posthumanism Network, April 25, 2018, http://criticalposthumanism.net/new-materialisms/

12. Heather Swanson, Anna Tsing, Nils Bubandt, and Elaine Gan, "Introduction: Bodies Tumbled into Bodies," in *Arts of Living on a Damaged Planet*, ed. Anna Tsing et al. (Minneapolis: University of Minnesota Press, 2017), M1–M11; p. M2.
13. The compound term *natureculture* is first introduced by Bruno Latour in *We Have Never Been Modern*, trans. Catherine Porter (Cambridge: Harvard University Press, 1993), and then used by Donna Haraway in *The Companion Species Manifesto: Dogs, People, and Significant Otherness* (Chicago: Prickly Paradigm Press, 2003) to denote the ontological inseparability of nature and society.
14. Hutcheon, *A Poetics of Postmodernism*, p. 145.
15. Soper, Kate, "The Idea of Nature," in *The Green Studies Reader: From Romanticism to Ecocriticism*, ed. Laurence Coupe (London: Routledge, 2000), 123–126, p. 124.
16. For an extended discussion of the hostile response postmodernism received in the early phases of ecocriticism and my defense, see Serpil Oppermann, "Theorizing Ecocriticism: Toward a Postmodern Ecocritical Practice," *ISLE* 13.2 (Summer 2006), 103–128.
17. Henry P. Stapp, *Mind, Matter, and Quantum Mechanics* (Berlin: Springer-Verlag, 1993), p. 168.
18. Roland Barthes uses the term "doxa" as standard opinion and norm, and also as powerful mass discourse. "The Doxa," writes Barthes, "is Public Opinion, the mind of the majority, petit bourgeois Consensus, the Voice of Nature, the Violence of Prejudice. We can call (using Leibnitz's word) a doxology any way of speaking adapted to appearance, to opinion, or to practice." See *Roland Barthes by Roland Barthes*, trans. Richard Howard (Berkeley: University of California Press, 1977), p. 47. Taking Barthes' notion of the doxa, Linda Hutcheon coined the term "de-doxify" to explain postmodernism's subversion of realist conventions. I use the term here to indicate how the material turn has successfully denaturalized the Cartesian worldview.
19. Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007), p. 140.
20. See Paul Crutzen and Eugene Stoermer, "The Anthropocene," *IGB Global Change NewsLetter* 41 (May 2000), 17–18.
21. Rachel Tillman, "Toward a New Materialism: Matter as Dynamic," *Minding Nature* 8.1 (January 2015), 31–36, p. 33.
22. Barad, *Meeting the Universe*, p. 185.
23. Arianne Françoise Conty, "The Politics of Nature: New Materialist Responses to the Anthropocene," *Theory, Culture and Society* 35.7–8 (2018), 73–96, p. 76.
24. Anthony Giddens, *The Constitution of Society: Outline of the Theory of Structuration* (Polity Press, 1985), p. 15.

25. Bennett, Jane. *Vibrant Matter: A Political Ecology of Things* (Duke University Press, 2010), p. viii.
26. Ibid., p. 23.
27. Barad, *Meeting the Universe*, p. 141.
28. Louis O. Mink, "Narrative Form as a Cognitive Instrument," in *Louis O. Mink: Historical Understanding*, eds. Brian Fay, Eugene O. Golob, and Richard T. Vann (Ithaca: Cornell University Press, 1987), 182–203, p. 186.
29. Eduardo Kohn, *How Forests Think: Toward an Anthropology Beyond the Human* (Los Angeles: University of California Press, 2013), p. 1.
30. Wendy Wheeler, "Natural Play, Natural Metaphor, and Natural Stories: Biosemiotic Realism," in *Material Ecocriticism*, ed. Serenella Iovino and Serpil Opperman (Bloomington: Indiana University Press, 2014), 67–79, p. 77.
31. Elizabeth Mazzolini and Stephanie Foote, "Introduction: Histories of the Dust Heap," in *Histories of the Dustheap: Waste, Material Cultures, Social Justice*, ed. Stephanie Foote and Elizabeth Mazzolini (Cambridge, Mass.: MIT Press, 2012), 1–18, p. 4.
32. Fredric Jameson, *The Political Unconscious: Narrative as a Socially Symbolic Act* (New York: Routledge, 1983), p. 110.
33. Mink, "Narrative Form," p. 186.
34. Jeffrey J. Cohen. *Stone: An Ecology of the Inhuman* (Minneapolis: University of Minnesota Press, 2015), p. 36.
35. Bennet, *Vibrant Matter*, p. 17.
36. Marcia Bjornerud, *Timefulness Timefulness: How Thinking Like a Geologist Can Help Save the World* (Princeton: Princeton University Press, 2018), p. 161.
37. Jan Zalasiewicz, *The Earth After Us: What Legacy Will Humans Leave in the Rocks?* (Oxford: Oxford University Press, 2008), p. 115.
38. Haraway, *When Species Meet*, p. 163.
39. David Abram, *Becoming Animal: An Earthly Cosmology* (New York: Vintage Books, 2010), p. 171.
40. Ibid., p. 172.
41. Barad, *Meeting the Universe*, p. 140.
42. Cohen, *Stone*, p. 35.
43. Karen Barad, "Intra-actions." Interview by Adam Kleinman, *Mousse* 34 (2012), 76–81, p. 77.
44. Timothy Morton, "Ecology as Text, Text as Ecology," *The Oxford Literary Review* 32.1 (2010), 1–17, pp. 5, 4.
45. Lynda Birke, "Unnamed Others: How Can Thinking about 'Animals' Matter to Feminist Theorizing?" *NORA – Nordic Journal of Feminist and Gender Research* 20.2 (2012), 148–157, p. 152
46. Mink, "Narrative Form," p. 186.
47. Mary Zournazi, "Cosmocracy: A Hymn for the World? Reflections on Michel Serres and the Natural World," *PORTAL Journal of Multidisciplinary International Studies* 9. 2 (July 2012), 1–9, pp. 3, 2.

48. Bronislaw Szerszynski, "The Anthropocene and the Memory of the Earth." Paper presented at the colloquium *The Thousand Names of Gaia: From the Anthropocene to the Age of the Earth*, Casa de Rui Barbosa, Rio de Janeiro, Brazil, September 15–19, 2014.
49. Bennett, *Vibrant Matter*, p. 117.
50. Haraway, *When Species Meet*, p. 26.
51. See Paul Cobley, "Semiotics," in *Routledge Companion to Literature and Science*, ed. Bruce Clarke with Manuela Rossini (New York: Routledge, 2011), 396–406. Cobley gives an overview of contemporary semiotics which include "a semiotics of plants ('phytosemiotics'), of fungi ('mycosemiotics'), and . . . ('microsemiotics,' 'cytosemiotics')" concerning the network of bacterial cells, as instances of post-biosemiotics that investigates "how organisms know the World": pp. 402, 403.
52. Cohen, *Stone*, p. 40
53. Serpil Oppermann, "Storied Matter," in *Posthuman Glossary*, ed. Rosi Braidotti and Maria Hlavajova (New York: Bloomsbury, 2018), 411–414, p. 412.
54. Serenella Iovino, *Ecocriticism and Italy: Ecology, Resistance, and Liberation* (London: Bloomsbury, 2016), p. 6.
55. Libby Robin, "Environmental Humanities and Climate Change: Understanding Humans Geologically and Other Life Forms Ethically," *WIREs Climate Change* 9.1 (January/February 2018), 1–18, p. 12.
56. Giovanna Di Chiro, "Seaweed, 'Soul'-ar Panels and Other Entanglements," in *Humanities for the Environment: Integrating Knowledge, Forging New Constellations of Practice*, ed. Joni Adamson and Michael Davis (New York: Routledge, 2017), 70–87, p. 72.
57. Ibid., p. 73.
58. Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton: Princeton University Press, 2015), p. 2.
59. David Nauguip Pellow, *What is Critical Environmental Justice?* (Cambridge: Polity Press, 2018), p. 2.
60. Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016), p. 10.