

## Material Engagements: Science Studies and the Environmental Humanities

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“[Matter] is not little bits of nature, or a blank slate, surface, or site passively awaiting signification, nor is it an uncontested ground for scientific, feminist, or Marxist theories. Matter is not immutable or passive. Nor is it a fixed support, location, referent, or source of sustainability for discourse” (Karen Barad, *Meeting the Universe Halfway*, 151)

And the word *environment*. Such a bloodless word. A flat-footed word with a shrunken heart. A word increasingly disengaged from its association with the natural world. Urban planners, industrialists, economists, developers use it. It’s a lost word, really. A cold word, mechanistic, suited strangely to the coldness generally felt toward nature. (Joy Williams *Ill Nature* 5)

Karen Barad and Joy Williams alert us to the rather shabby theoretical and rhetorical treatment of “matter” and “environment” in the late twentieth century. “Matter,” the vast stuff of the world and of ourselves, has been subdivided into manageable “bits” or flattened into a “blank slate” for human inscription. The “environment” has been drained of its blood, its lively creatures, its interactions and relations--in short, all that is recognizable as “nature”--in order that it become a mere empty space, an “uncontested ground,” for human “development.

Even though the target of Barad’s critique is the linguistic turn within theory, especially feminist theory, when put next to Williams’ critique of the word “environment,” a troubling parallel arises between predominant theoretical conceptions of “matter” and a much wider disregard for the value of nonhuman nature. My book *Bodily Natures: Science, Environment, and the Material Self* addresses the de-materializing networks that cross through academic theory, popular culture, contemporary discourse, and everyday practices, by focusing on the possibilities for more robust and complex conceptions of the materiality of human bodies and the more-than-human world. *Bodily Natures* draws heavily upon, and, I hope, contributes to, the field of science studies, as it advocates a conception of “trans-

corporeality,” which stresses the flow of substances and forces linking bodies and environments. Rather than encapsulate my argument for “trans-corporeality” here, however, I would like to briefly discuss why I think science studies is so crucial for scholarship in the environmental humanities.

Ecocriticism, like other politically-infused theoretical practices, such as feminism, queer theory, and critical race studies, must continually engage in discursive critique, tracing not only how various conceptions of nature have implications for environmentalisms, but how they have been bound up with pernicious notions of gender, race, sexuality and class. At this moment, ecocritics need to analyze, for example, how the official and unofficial representations of climate change science may reinforce oppressive social hierarchies, systems of power, and retrograde notions of nature as primarily a resource for human use. Even as this sort of discursive critique remains crucial, however, ecocriticism must also engage with the materiality of human bodies and nonhuman nature lest ecocriticism--ironically--inhabit a realm sequestered from the environment itself. While most scholarship not only in literary studies, but in the humanities in general, has been profoundly influenced by the “linguistic turn” in critical theory, ecocriticism, and the environmental humanities more broadly conceived, are poised to depart from the predominant theoretical models that isolate language and discourse from material forces. It is extraordinarily difficult, however, to forge new approaches that can retain the incisive and illuminating force of poststructuralist critique and, at the same time, to open out lines of questioning so as to allow for the significance, agency, and substance of materiality. Moreover, because ecocriticism is concerned with the relationship between texts and the material world it needs methods of approaching scientific accounts that neither revere them as unproblematic paths to the truth of nature, nor subject them to echo chambers of skeptical critique. Environmental humanities scholars must engage with scientific accounts of the world and yet they must retain modes of analysis and critique that can trace how these very accounts may be shaped by or articulated with social, cultural, and economic systems. Glen A. Love, in stark contrast, rejects the notion that science is itself a cultural, historical, and political enterprise, arguing that ecocriticism should “emulate” the “standards of evidence and rational thought, “as well as “that spirit of rigorous methodology” found within science<sup>1</sup> (71). This form of literary studies, which divorces it from cultural critique and interdisciplinary social theories, is, in my view, both epistemologically impoverished and politically dangerous.

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<sup>1</sup> For a more extensive critique of Glen A. Love, see Clarke.

Science studies scholarship provides models not only for engaging with scientific accounts of the environment, but for tracing the interactions between texts/language/discourse and the wider material world. Scholars in science studies bring an array of social theories, philosophical questions, and historical contexts to bear upon scientific matters, mixing analyses of literature, science, and political forces in complex ways that cannot be predicted in advance. Science studies, because it is informed by social and political theories and yet also contends with the material substances, actions, and agencies of the natural world, puts forth provocative, even jolting, methodologies and reconceptualizations. I would like to propose, then that science studies can complicate and enrich scholarship in the environmental humanities. Science studies, especially the work of Donna Haraway, Bruno Latour, Andrew Pickering, Nancy Tuana, and Karen Barad, grapples with the complex interactions between the natural and the social, the discursive and the material, the sciences and the humanities. In short, science studies offers a rich body of scholarship that forges conceptions of materiality that are neither reductive nor essentialist. These theorists, in fact, offer compelling and productive ways to trace the “mangling” of scientific and other social practices (Pickering), the “intra-action” between discourse and materiality (Barad), and the ways in which networks are “simultaneously real, like nature, narrated, like discourse, and collective, like society”(Latour). These emerging models of materiality are crucial for developing an ecocriticism that does not replicate nature/culture dualisms or reinscribe nature as a blank slate for the imaginings of culture, but instead, seeks to account for the ways in which nature and environment, as material forces, act, interact, and profoundly affect cultural systems, texts, and artifacts. Indeed, it becomes impossible to separate “nature” and “culture” when we focus on the intra-actions of discursive and material forces. Even as most science studies scholarship is not, itself, environmentalist, it may provide theoretical and methodological models that foster the ethical and political project of ecocriticism—to do intellectual work that **matters** not only to humans, but to the more-than human world.

In Bruno Latour’s vision of democracy, it is scientists who represent the nonhuman, bringing their concerns to the table. This formulation may serve as a striking parallel to the way in which those of us who have been trained in the humanities, but who desire more robust accounts of the natural world, turn to science, and to science studies, as a way to bring “nature” or materiality back into the discussion. Latour, in *We Have Never Been Modern*, contends that our “intellectual life is out of kilter,” due to the severing of scientific,

sociological, and textual knowledge practices: “We may glorify the sciences, play power games or make fun of the belief in a reality, but we must not mix these three caustic fields” (5, 6). And yet the multitude of “nature-culture” “hybrids” that surround us cannot be understood in such segregated terms:

The ozone hole is too social and too narrated to be truly natural; the strategy of industrial firms and heads of state is too full of chemical reactions to be reduced to power and interest; the discourse of the ecosphere is too real and too social to boil down to meaning effects. Is it our fault if the networks are *simultaneously real, like nature, narrated, like discourse, and collective, like society?*” (emphasis in original, 6)

Networks, then, require analyses that can grapple with their reality, narrativity, and collectivity—which is surely no small feat, given that scholars are trained, for the most part, to engage in only one of these three modes of investigation. Even though Latour’s book is hardly new, ecocriticism has not exactly risen to the methodological challenges that this book poses.

Karen Barad’s monumental book, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, radically rethinks materiality, agency, and realism, putting forth a coherent and comprehensive theory of science, knowledge, meaning, and mattering. Drawing upon the philosophy of Neils Bohr as well as feminist and queer theories of performativity, Barad constructs a theory of “agential realism,” in which agency “is cut loose from its traditional humanist orbit: “Agency is not aligned with human intentionality or subjectivity” (MU 177). Barad’s theory of material agency fosters a robust sense of environmental ethics. Acknowledging the agency of the more-than-human world is crucial for environmental ethics because makes it impossible to imagine nature as a passive resource or a repository of discrete things that can be used in predictable, isolated ways. Acknowledging the agency of all that is not human affirms the need for places in which the “doing/being” of creatures, ecological systems, and other nondiscrete lifeforms can flourish. Barad concludes *Meeting the Universe Halfway* with an entangled, intra-active, posthuman ethics: “Intra-acting responsibly as part of the world means taking account of the entangled phenomena that are intrinsic to the world’s vitality and being responsive to the possibilities that might help us and it flourish. Meeting each moment, being alive to the possibilities of becoming, is an ethical call, an invitation that is written into the very matter of all being and becoming” (MU 396). This profound sense of entanglement, intra-activity, and perpetual

emergence fosters an ethical stance that insists that the activities and knowledge practices of the human are always part of, and accountable to, the wider world. Understanding the material world as agential and considering that “things,” as such do not precede their interactions, is I think, crucial for 21<sup>st</sup> century environmentalisms in which the existence of anything—any creature, ecosystem, climatological pattern, ocean current—cannot be taken for granted as simply existing “out there.” Whereas Barad’s theory, based on quantum physics, is itself a comprehensive onto-epistemology, I think it is particularly relevant for our contemporary state of environmental crisis in which elaborate, colossal human practices, extractions, transformations, and productions have provoked heretofore unthinkable interactions at all levels. If the material environment is a realm of often incalculable, interconnected agencies, then we must somehow make political, regulatory, and even personal decisions within an ever-changing landscape of continuous interplay, “intra-action,” emergence, and risk. And the environmental humanities may forge modes of inquiry and analysis that do not diminish the significance of the very stuff of the more-than-human world, as they struggle to trace the entanglements of the “real,” the “narrated,” and the “collective.”

## Works Cited

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