

## **‘Speciesism’: A Conversation With Humanists. And Posthumanists.**

This e-conversation is based upon a panel entitled “‘Speciesism’: Identity Politics Meets Ecocriticism” which convened at the most recent meeting of the Group for Early Modern Cultural Studies. Most of the panelists admitted to some discomfort with the prompt, reprinted below, and much of the discussion turned on the relationship between literary criticism and ecopolitics. A member of the audience asked what cultural work, if any, would be appropriate for literary critics working with this natural and critical landscape. The below remarks are attempts on the part of some of the field’s most prominent cultural historians to grapple with this question. L.C

**Lucinda Cole:** In his recent book *Animal Rites: American Culture, the Discourse of Species, and Posthumanist Theory*, Cary Wolfe attempts to develop a posthumanist account of the subject. In this he follows Georges Bataille, Jacques Derrida, and Rene Girard, among others, all of whom have attended to how the “human” requires construction of an “animal” other. In this sense, Western thinking is intrinsically “speciesist.” As Wolfe writes:

The effective power of the discourse of species when applied to social others of whatever sort relies, then, on a prior taking for granted of the *institution* of speciesism—that is, of the ethical acceptability of the systematic “noncriminal putting to death” of animals based solely on their species. And because the discourse of speciesism, once anchored in this material, institutional base, can be used to mark *any* social other, we need to understand that the ethical and philosophical urgency of confronting the institution of speciesism and crafting a posthumanist theory of the subject *has nothing to do with whether you like animals*. We all, human and nonhuman alike, have a stake in the discourse and institution of speciesism; it is by no means limited to its overwhelmingly direct and disproportionate effect on animals. Indeed, as Gayatri Spivak puts it, “The great doctrines of identity of the ethical universal, in terms of which liberalism thought out its ethical programmes, played history false, because the identity was disengaged in terms of who was and who was not human. That’s why all of these projects, the justification of slavery, as well as the justification of Christianization, seemed to be alright; because, after all, these people had not graduated into humanhood (7).”

As scholars of the early modern period whose work is tethered to “animal studies,” many of you have in one way or another written about the history of liberalism to which Wolfe, via Spivak, refers. You’ve demonstrated the effects of our “great doctrines of identity” as they have played out in one or another historical and cultural context. Based upon your scholarship and personal experience, to what extent do you share the urgency Wolfe expresses about “confronting the institution of speciesism” and “crafting a posthumanist theory of the subject”?

**Donna Landry:**

In *Animal Liberation*, published in 1975, Peter Singer first proposed that speciesism was comparable with sexism and racism. The proposed rubric for our discussion follows this same logic. However, does the second part of our rubric, ecocriticism, necessarily follow the same logic as identity politics, or as Singer's utilitarian ethics? Does ecological thinking even admit the possibility of an animal rights' position such as that advocated by Tom Regan, and implicitly endorsed by Cary Wolfe? Wolfe wishes us to develop a "posthumanist" theory of the subject, to go beyond liberal humanism in the direction of a greater emancipation of subjects than has ever been achieved under the banner of liberalism. That is how I understand his citation of Gayatri Spivak, as pertaining to the historical failure of the enlightenment completely to unfold, requiring our "ab-use" of it in the present: "a seizure from below" (Spivak 219). If, as Bruno Latour has claimed, we have never been modern, we have never been fully human either. Humanity defined zoologically and anthropologically – humanity as a species – does not exclude slaves, women, the working classes, colonized peoples. This is something that Marx was at some pains to point out with his concept of species-being. What does *homo sapiens* require for its well being, even its flourishing, its "happiness" in itself and for itself as a species? (Marx 70-101; see also Benton 26-30; 45-57).

One of the problems with Singer's critique of speciesism as discrimination is that the very notion of discrimination is more complicated than it might at first appear, especially with regard to species not as a category of prejudice but as a category of knowledge, as in Marx's concept of species-being or Darwin's notion of evolution of species. Although the category of species may be no less a construct than is sex or gender or race, to have zoological explanatory power, it must bear some relation to the actual qualities and requirements of the species in question, beyond mere prejudice. Discrimination as Singer employs the term means discrimination on the grounds of group-belonging, and here discrimination is equivalent to prejudice. But discrimination also means the making of, or apprehending of, distinctions; being able to discriminate or distinguish on the basis of knowledge of the objects or subjects in question. Discrimination in this sense carries the connotation of knowledgeable distinctions, not merely prejudicial ones.

If we turn now to ecological thinking, the importance of speciesism in this second sense becomes clear. Animal rights remains based on liberal notions of the individual subject. Regan's subject-of-a-life criterion exemplifies this. From an ecological perspective, however, the operative category in debates about biodiversity, sustainability, endangered status, conservation, and preservation is the species, not the individual. Keith Tester makes this clear when he writes that for an animal rights protester against fox hunting, for instance, it is the suffering or welfare of the individual fox that is at stake (Tester 179-93). For the ecologist, it is the welfare of the species as a whole that is at stake, and also the welfare of the entire habitat, not only of *vulpes vulpes* in isolation, but of foxes in their relations with all other species: the entire ecosystem of the bioregion in which said foxes live. Preserving as much wilderness as possible, and tackling corporate interests that are indiscriminately plundering the globe, become important emphases for deep and social ecology. Once ecocriticism has become part of the equation, the analogy with New Social Movements in their liberal-enlightened focus on individual subjects breaks down. Species-being, and flourishing, replaces individual lives, their suffering, and their right-to-life or death, as the critical criterion for determining ethical action. According to this logic, wildlife conservation and the maintenance of biodiversity might require an engagement with recreational hunting, for instance.

This is a different terrain of debate from the philosophical one of “thinking with animals” which, in their different ways, Levi-Strauss, Derrida, Vicki Hearne, Donna Haraway, Paul Patton, Erica Fudge, and Wolfe have pioneered. I want to shift the terrain once more to a slightly less Eurocentric, or Euroamerican one, by considering the dog’s eye view of human-animal relations given us by the Nobel prize-winning Turkish novelist Orhan Pamuk, poised between Europe and Asia. Recent discussions of Habermas’s theory of the public sphere have begun to acknowledge the coffee house’s Arab and Ottoman roots. At the heart of Pamuk’s conjuring of the early modern coffee houses of Istanbul is a dog, both a dog who lives at the coffee house, where his master is a storyteller, and a representation of a dog, a drawing or sketch. The dog remarks that a puritanical cleric from Erzurum has been seeking to have the coffee houses closed down because they encourage social mixing and sedition; the cleric is afraid that men “become so besotted with coffee” that they “actually listen to and believe what dogs and mongrels have to say.” The dog, after having enjoyed some coffee himself, poured out for him by his master, retorts:

With your permission, I’d like to respond to this last comment by the esteemed cleric. . . I’m a great admirer of our coffeehouses . . . In the lands of the infidel Franks, the so-called Europeans, every dog has an owner. These poor animals are paraded on the streets with chains around their necks, they’re fettered like the most miserable of slaves and dragged around in isolation. . . Dogs who roam the streets of Istanbul freely in packs and communities, the way we do, dogs who threaten people if necessary, . . . such dogs are beyond the infidels’ conception. . . It’s not that I haven’t thought that this might be why followers of the Erzurumi oppose praying for dogs and feeding them meat on the streets of Istanbul in exchange for divine favors and even why they oppose the establishment of charities that perform such services. If they intend both to treat us as enemies and make infidels of us, let me remind them that being an enemy to dogs and being an infidel are one and the same. (Pamuk, 12-14).

I recommend thinking with Pamuk, and Pamuk’s dog, about identity politics. This dog, resident of the early modern Ottoman public sphere, perceives certain cultural differences between East and West that may appear quite strange, hence defamiliarizing, to a Western audience: the free and the unfree, the happy and the enslaved, may appear reversed. This is why consorting with mongrels in coffee houses amounts to sedition, never a bad idea in political and philosophical discussions if we seek to pursue elusive truths. This dog’s eye view reveals above all how imbricated East/West and infidel/non-infidel remain, despite their differences, for all subjects poised on the frontier between Europe and Asia.

Which brings me to Carey Wolfe’s attempt to secure, by targeting the limits of postcolonial criticism, a certain radicalism for *Animal Rites*. Wolfe writes, “Bhabha’s work stands in relation to the gray gorillas as Crichton’s does to the Kigani. This is to suggest not that Bhabha is wrong, but that he is only half right” (189). “Half right” echoes punningly as “half write” – Bhabha has written only half the story. Might there also be, especially in relation to those gray gorillas, another echo of Bhabha’s famous formulation about the colonial other in mimicry being “not quite not-white”? Not that Bhabha is wrong, but that he is only half white. Perhaps the gray of those gorillas might mark an advance toward the whiteness of enlightenment? Mired in postcoloniality, Bhabha is still harping on brown. He hasn’t changed into his gorilla suit, or become a wolf in sheep’s clothing, or even in wolf’s clothing. If he were a proper theorist of postmodernity, that is, Bhabha, like Wolfe, would be able to

see the animals for the people, which is essential for “making one’s name” as a Wolfe (189). Surely the point of animal studies in the humanities, or of books like *Animal Rites*, is not merely to displace, according to the imperatives of academic fashion, other critical-social movements, such as feminism, anti-racism, or postcolonial theory? For here is where an opportunity to do some real work, of articulation not trashing, (re)presents itself: listening to dogs.

**Bruce Boehrer:** My original input to this discussion was cast in the form of satire. Out of respect for those who felt their oxen gored unfairly by that initial intervention, I will contribute this time in more sober fashion.

Like most of us in this conversation, I’m a literary historian by trade. This occupation has chosen me at least as much as I have chosen it, since as far as I can tell there is nothing else in the wide world at which I am sufficiently competent to make a living. Given that my life’s principal talent seems to involve reading books that interest no one else; identifying figures of speech, literary allusions, and parallels of plot; and writing books that interest no one else, I am perhaps understandably uneasy when my profession calls upon me to take a stand on questions of a political and ethical nature. Hence, in fact, my initial recourse to satire: not only do I see little reason to believe that my profession is capable of making a serious difference in such questions; I am also confident that any effort I might make to stand up for my own beliefs would in the end do more harm than good. I have neither the charisma, the energy, the personal consistency, nor the record of commitment and activism that one would expect of an advocate for a cause. In the event, satire seems the most appropriate political intervention for someone of my modest attainments.

And yet my own work has dragged me toward questions of animal rights and ecopolitics. I didn’t plan things that way; I’m not that smart. I just pursued questions that I found interesting: why does Shakespeare elide feminine and animal nature as forcefully as he does in A Midsummer Night’s Dream? Why does Milton contemplate the nature of marriage and the character of bestiality in the same book of Paradise Lost? Why do parrots appear as often as they do in early sixteenth-century anti-papal satire? I didn’t conceive of these questions as inherently connected to a program of social activism. Frankly, I thought of them more as an exercise in old-fashioned philology, bolstered perhaps by some more recent theoretical notions. And when my work began revealing its contemporary political implications and applications, I did not respond to these readily or well.

But I did begin to respond anyway, slowly and inadequately and with great gnashing of teeth, because the work left me no alternative. During the writing of Shakespeare Among the Animals, I became a vegetarian. Then I lapsed. Then I went vegetarian again. Then I lapsed again. And now, more securely than before, I’m back in the vegetarian fold. This has become a serious life choice for me, but precisely because I’ve done such a lousy job of implementing it, I feel I have no business presenting myself as an exemplar of the vegetarian commitment. I’m just a poor slob trying to evolve, and I see no reason to believe that my evolution will be of consequence to anyone but myself.

It is for this reason, too, that I contain to wear my old leather jacket. It dates from a difficult and unreconstructed time of my life, and while I hardly ever wear it at home

anymore (one doesn't wear such things much in Florida, in any case), I do make a point of wearing it at conferences. It immediately punctures any pretensions I might make to animal-rights correctness, and for me it has become a necessary badge of shame. Erica Fudge has pointed out that the eating of meat in seventeenth-century England could function as an important symbolic activity: a reminder of our fallen nature and need of redemption. The leather jacket has become something similar for me.

So you may perhaps understand that when invited to consider—and still worse, to write a statement about—the politics of my scholarship, I find myself in exquisite discomfort. I share Cary Wolfe's concern with the poisonous character of speciesism, although I'm not entirely convinced that in confronting it we must also "craft . . . a posthumanist theory of the subject." As Peter Singer noted a long time ago, Hindu culture has long been more respectful of animal rights than has the Judaeo-Christian tradition; yet I see no reason to conclude therefore that the Hindu tradition is somehow posthumanist. And in any case, I'm sufficiently aware of my own personal inadequacies not to want someone like me standing up for the things I believe in. I'd rather just try to do them better.

**Richard Nash:** I believe I am inserting myself third in the queue; certainly, in the brief comments I am going to offer, I am thinking through the comments that I have read from Donna Landry about listening to dogs and from Bruce Boehrer about sustaining arguments with oneself. These seem to me precisely the kinds of thinking we need to shuttle between as we theorize more ecologically our notion of "world" in light of the challenges that "the problem of the animal" raises in theoretical discussions, particularly for those critical and theoretical formulations that have been launched in the service of "identity politics." The politics of occupying less choate identities, while listening more attentively to companion species offer, I believe, the best chance for sustaining and inhabiting responsibly our worlds.

Trained, like Bruce, as a literary historian, and inheriting some hybridized mongrel pedigree of literary/cultural/intellectual historian, I am drawn to anecdote and implication. My microhistorical inclinations are never happier than when worrying a bone, whether material or intellectual; and lately my bones have tended to be canine or equine, filled with the marrow of race and politics, both global and local. I want to resist the temptation of those inclinations here, if only because they are so thoroughly grounded in my consciously humanist inheritance that it might be good for me to reach beyond those anecdotes to a horizon I only glimpse slightly, catch faint odors of on the breeze, hear only in attenuated and intermittent snatches.

In thinking this way, I find it especially helpful to turn to a least likely source. That is, indeed, a longstanding practice of mine, and I have no idea where it comes from. In this instance, that turning is to the philosophical work of a feminist physicist, Karen Barad. Her notion of agential realism (soon to be, if not already, articulated in Meeting the Universe Halfway) theorizes our encounters with the world, and particularly the experimental space of physics, through a reconception of subject-object dualisms that refocuses on the resulting "phenomena" as "intra-actions" between assemblages of subjects, objects, and measuring apparatuses. There is much that is rich and powerful and productive in this theoretical refiguring of our world, and not least of those possibilities, it seems to me, is what such a re-orientation offers those of us who seek

more useful descriptions and theories of our ecologies. The empiricist encounter that Barad is re-theorizing posits both observer and observed as possessing autonomous identities, while her re-articulation of that position generates a world in which agents move in and out of collaborative affiliations.

Such a rethinking of the ontology of the world resonates in powerful ways with Donna Haraway's provocative challenge to move evolutionary thinking beyond the paradigm of dominion to a serious articulation of what it means to think of "companion species." Our observations of the physical world have for some time now been demonstrating that ecology matters in fundamental ways to species evolution--that it simply does not work to imagine evolution of a species independent from its elaborate ecosystem. To that extent, we have rather thoroughly accepted a governing logic of interdependence that runs counter to the long-accepted doctrine of dominion, under which one species of animal domesticates another in the form of divinely sanctioned subordination. To think seriously of species co-evolving (canine and human, for instance) dramatically changes our constructions of ourselves and becomes an all the more important version of Donna Landry's injunction that we do a better job of listening to dogs.

That is, of course, difficult for any number of reasons. The language barrier is, of course, a difficult one; and all acts of translation involve difficult crossings, not equally innocent. But some translations are harder than others, and Giorgio Agamben's redeployment of Jakob von Uexkull's useful term "*umwelt*" seems to me remarkably helpful here. What is most challenging--and I find stimulating--about this notion of *umwelt* is the idea that creatures occupy different worlds, each inhabiting the *umwelt* rendered available by the perceiving sensorium. As species, dogs and humans may be thought to coevolve, yet when they arrive in the form of two individuals--even if it is in that fictional coffeeshop--the space they occupy will necessarily be configured differently. As we listen to dogs, we must know that we cannot hear as well. Negotiating the translations across multiple *umwelts* that constitute an enormously more complex notion of "world" than that posited by Heidegger is a daunting challenge, but is also an exciting possibility, one that offers as a byproduct a dramatic, and potentially productive, rethinking of familiar categories of identity politics.

**Erica Fudge:** Donna Landry offers a very helpful and succinct outline of core differences between liberal rights arguments about animals and ecological ones, and this is a distinction that might be used to distinguish ecocriticism from animal studies. It seems to me that the ecological argument, in which the species rather than the individual is emphasised, sits at the heart of much literary ecocriticism, in which landscape and nature in general are the focus and animals perceived only as part of that landscape. I am not denying that there is very sophisticated and interesting work going on in ecocriticism, just noting its particular interests. In animal studies, however, because the focus is on animals, the wider natural environment is not the centre of attention, although, of course, it can be vitally important to some work. The animal - whether real or ideal - is the focus, and this focus can bring with it emphasis on particular concerns, about the nature of agency, for example. Such a concern sits at the heart of the construction of the self of liberal humanism, and is familiar to all who are working in the humanities. But, in retaining this focus on agency, animal studies scholars may not simply be supporting the

liberal humanist construction of the individual, or the conception of animal rights that emerges from liberal humanism (although some may be). Much of the work in the field proposes that animals can have agency, a perspective that challenges the very liberal humanism that constructed these ideas in the first place (on animal agency see Fudge, 2006a). As Richard Nash notes in his response here, it is possible to think about our 'encounters with the world' as 'intra-actions' - as actions between individuals (human or otherwise) that construct those individual actors. In such a world animals can have agency.

And this is where we can see most obviously the links between posthumanist ideas and animal studies. Clearly - and most obviously - the anthropocentrism of liberal humanism is challenged by animal studies (indeed, I wonder if the Humanities is still the Humanities after the entry of animals). By recognising the cultural and philosophical centrality of animals scholars are inevitably challenging the assumption of the centrality and significance of the human who exists in opposition to rather than in juxtaposition with animals. But we can go further. Neil Badmington offers a nice definition of posthumanism: it has, he argues, 'interrogated the myth of humanism by activating the moments of pollution and the slow slide of certainties that have habitually been drowned beneath the white noise of uniqueness.' (263) He recognises that animal studies can be part of posthumanist enquiry and, noting Cary Wolfe's claim that cultural studies is 'founded upon the repression of "the question of nonhuman subjectivity"' (262), Badmington proposes that we refocus our attention on the nonhuman and rename the Humanities the posthumanities (267-9). For scholars working in animal studies, such a shift is not simply fashionable - following a critical trend - it is a recognition that a full analysis of so-called human culture must include animals: as geographers Chris Philo and Chris Wilbert have argued, 'With the human domestication of animals and plants, the number of non-humans existing alongside people proliferates exponentially, making it impossible to recognise a pure "human" society.' (17) Virginia DeJohn Anderson's work on the role of the colonialists' cattle in the New World seems exemplary in this critical context.

So where does Wolfe's statement about speciesism sit here? Following Carol J. Adams, Jacques Derrida and others, Wolfe sees inevitable and unbreakable links between the speciesist relegation of animals to the realm of the inferior other and the human repression of other humans (I also found this in early modern constructions of the human [Fudge 2000; 2006b]). For Adams, 'the oppression of women and the other animals [are] interdependent' (16); for Derrida, western philosophy relies upon the concept of this creature called 'the animal' in order to establish and construct its own arguments which, in turn, prioritise a certain construction of the human (409). Thus Wolfe's challenge to speciesism is not only or necessarily because he likes animals but because he sees the oppression of animals as inseparable from - foundational to - the oppression of humans. In these terms, if we challenge speciesist ideas we also challenge the construction of the human as a species splendid in its isolation from the natural world as a whole, and such a challenge can, surely, only impact positively on human relations with that natural world and the nonhuman animals that live in it.

And this takes me to Bruce Boehrer's statement that our profession is not 'capable of making a serious difference' to political and ethical debate. As early modern literary historians we are not tying ourselves to cranes to stop road construction, or endangering our lives at sea to highlight the destruction of the environment by the oil industry, or under threat of imprisonment for forcibly entering animal research labs. We are, however, involved in educating people - in the classroom and in published work - and this, as Louis Althusser knew, can be effective in challenging the status quo. I am not talking about convincing our students or our readers to become vegetarians. I am talking about doing what all good academics do best: asking our students and our readers to think about things that might otherwise go unthought: in the case of my own work, to think about what it means to be a human being; about how that being human has been constructed in history; about how that construction of the human that we live with now might impact upon the world we live in, the people we live alongside, and so on. It is all too easy to assume the human as a given and unproblematic category in the world, and in my work I want to probe the ways in which that assumption - that the human does not need to be thought, is not part of nature - has been constructed, what that construction allows us to do, and what scrutiny of the historically situated nature of that construction might do. I hope I do not preach; I hope that I open up for interrogation an important aspect of the way we live in the world. What my students or my readers do in their interrogation is their choice: my job is to prod towards thought.

Early Modern Studies is, I think, particularly well placed to allow us to do this. The early modern period, as its name suggests, is a period when many key aspects of the modern world begin to emerge - in terms of our conceptions of science, selfhood, global politics. To read Bacon, or Montaigne, or Descartes is to read debates about the self in relation to nature that continue to be played out in contemporary philosophy. As well as this, as we literary historians know, the early modern period is also full of extraordinary literary works, works that are infusing those philosophical ideas with wonder. For example, when Satan declares, in a challenge to God's power in Book I of *Paradise Lost*,

The mind is its own place, and in itself  
Can make a heaven of hell, a hell of heaven.  
What matter where, if I still be the same ... (I, 254-6)

not only is he kidding himself, he is also reflecting, surely, Cartesian ideas about selfhood in which the self - the *cogito* - is tied to neither time nor place, but only to itself. Such a rendition of Descartes' idea (an idea that sits at the heart of liberal humanism) can hardly be read as a positive one, and perhaps we can read Adam and Eve's exit from Eden 'hand in hand' (XII, 648) at the end of Milton's epic as an alternative - more positive - way of being in a corrupt world, in which community and comradeship are preferred to individualism.

Landry argues that literature can defamiliarise the world, and she is surely right: Milton's representation of Cartesianism certainly fulfils this ideal. She proposes a contemporary Turkish dog story that leads us to think about very human differences - 'East/West and infidel/non-infidel' - as a model of the way forward for literary studies. I wonder if we



can't also find animals (more dogs, indeed) in early modern literature, that are leading us to think about animals as well as humans. For me, the oh-so brief story in *The Two Gentlemen of Verona* about the fate of the lapdog Proteus has sent to Silvia - it was, Lance says, 'stolen from me by the hangman's boys in the market-place' - and Lance's replacement of it with his own dog, Crab (4.4.53-55), says a great deal about the lives of animals that are present in early modern literature. These animals are utterly marginal (we never find out what happens to the stolen lapdog, although my imagination along with my knowledge of early modern ideas tells me it is unlikely to be a happy ending) but central to the plot; they are silent but speak volumes about their world; they are other and they are self (see Fudge, 2007). If we don't read these animals we miss out on crucial aspects of the period, of its construction of itself and its construction of all of us animals (human and nonhuman) now.

Robert Markley:

The question of speciesism raised by the original panel at the Group for Early Modern Cultural Studies conference in February 2007 and addressed in this exchange by Donna Landry, Bruce Boehrer, Richard Nash, and Erica Fudge centers on a very specific understanding of "species": the tiny populations of mammalian eukaryotes that make up an infinitesimally small percentage of the organisms sharing the earth. In different ways, all of my colleagues' comments about the significance of animal studies in the early modern period suggest that the concept of *species* itself is tied to particular constructions of western moral philosophy, liberal political theory, traditions of literary and cultural criticism, and understandings of "modernity"—not to mention to the emergence of, and debates within, animal studies. Even if we situate the concept of species within a historical narrative of evolutionary biology—from Karl Linnaeus, to Charles Darwin and Alfred Russel Wallace, to Stephen Jay Gould—we still risk reproducing a kind of eukaryotic provincialism that reinscribes a host self-congratulatory assumptions and values about *homo sapiens* as the shepherd, manager, and conservator of the planet's biota.

In their comments, Landry and Nash call attention to the ways in which notions of species and ecology are mutually constitutive. Although most participants in debates about animal rights, and scholars of animal studies more generally, identify themselves as environmental activists, the ecologies that they typically invoke—whether in terms of habitat preservation, biodiversity, or landscape restoration—are those compatible with ideas of coevolution that exist within the restricted framework of, let's call it, mammalian hegemony. But there are more microbes in heaven and earth (and everywhere in between) than are dreamt of in humanist philosophy, and any efforts to wrestle with the problems posed by speciesism have to recognize

that ecology needs to be rethought in non-anthropocentric terms. In this regard, decentering humankind entails decentering our companion species as well—or, more usefully, expanding our understanding of "companion species" to include the innumerable species of bacteria and archaea without which we would neither exist nor have evolved. In this respect, I'd suggest, that by redefining the politics of species and speciation, we can develop ways to approach larger issues that (potentially) can get us out of the humanist/posthumanist cul de sac in animal studies: we can't live with the old humanism and we can't live without it.

In the 1970's, Carl Woese revolutionized microbiology by comparing molecular sequences (rRNA) that contain the code for ribosome, the complex structure, found in all cells, that makes proteins. Rather than trying to extend a concept of functional evolutionism that focused on structural adaptation, Woese developed technologies to study molecular sequence analysis and thereby offered a means to assess the evolutionary relationships between organisms: in brief, the greater the number of different gene sequences between two organisms, the greater the evolutionary distance between them. The outline of these relationships can be rendered schematically by what Woese calls the universal tree of life that divides biota into three phylogenetic domains: archaea, bacteria and eucarya (eucaryotes). From a technical perspective, the ability to identify organisms by gene sequences (frequently analogized to digital barcodes) allowed scientists to perform comparative analyses by removing genes from their environments (without the long and tricky process of culturing them), subjecting them to sequence analysis, and then situating them heuristically in relation to rapidly expanding libraries of other genetic sequences.

Because the study of rRNA and other genes from a variety of environments has increased exponentially scientific understanding of microbial diversity and distribution, the idea of *species* itself has undergone a revolution: distinguishing among species is no longer solely the product of structural taxonomies and comparisons but a heuristic—a set of complex inferences that can be drawn about evolutionary pathways, roads not taken, and abrupt and puzzling evolutionary ends. If we shift the focus from microbes to those small offshoots of eukaryotes that we call "animals" and "humans," the problems of genetic and therefore evolutionary relationships grow more, not less, complex. In common sense terms, the revolution in microbiology reveals that physiology—even seemingly self-

evident adaptations like the opposable thumb—is not history, and that all evolution is coevolution even "within" as well as between species.

In a series of profoundly challenging studies, presented for non-specialists in books such as *Microcosmos* and *What Is Life?*, the evolutionary biologist Lynn Margulis has argued that species evolve by subsuming the genetic material—the gene sequences-- of other species. Evolution is not a tale of self-fashioning adaptation or a cause and effect response to environmental stimuli, but a matter of existing life forms—the thousands of archaea that have taken up residence in the digestive systems of animals, for example—adapting as well as adapting to their environments in order to ensure the survival of their species. Retreating from an atmosphere becoming increasingly toxic with their excreted oxygen a half a billion years ago, these anaerobic organisms sought symbiotic refuge in the hospitable environments of eukaryotic guts. What we think of as Darwinian evolution—the "ascent" to "man"—is, for Margulis, a process of multi-species coevolution, ever sensitive to changing environmental conditions. Bruce Clarke, among others, has located Margulis's work in the context of second-order cybernetics as an adaptation and extension of James Lovelock's Gaia hypothesis and its complex feedback loops between organism and environment. For Margulis, the question "what is life?" provokes a host of questions about the triggers, pathways, and consequences of speciation.

To talk seriously about coevolution is to relinquish, as much as possible, our eukaryotic provincialism as well as our anthropocentrism without surrendering to romantic idealizations of a "harmonious" nature that never was and never will be. The question of speciesism, then, involves (at least) a double perspective on time and causation: evolutionary time (the object of scientific inquiry) and historical time (the subject of humanities). Evolutionary time is coeval with a geophysical time that can be glimpsed only through experiment rather than by experience. There is, after all, no way to bring the "reality" of the Jurassic era into the domain of the humanities except by computer-generated, Spielbergian graphics. The problems of this cross-disciplinary doubled perspective—which I've cast in terms that Margulis, Clarke, and Niklas Luhmann might find congenial—is also a way of seconding Bruno Latour's argument in *We Have Never Been Modern*: to privilege the historical time of the humanities is to remain entangled in the double-bind of philosophical and techno-scientific modernity, endlessly engaged in rituals of purification (the focus on

speciation as classificatory mastery) and hybridization (defining coevolution by Dr. Dolittle the animals). On the political implications of ecology touched on by Boehrer, Nash, Fudge, and Landry, I could hardly agree more. But if the question of speciesism encourages us to see the world in non-anthropocentric terms, a full understanding of the situatedness of eukaryotic evolution should remind us that, upon this bank and shoal of time, we face an ongoing eco-climatological crisis that threatens to sediment us into the fossil record.

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