



# REFLECTIONS on the PLANTATIONOCENE

a conversation with  
Donna Haraway  
& Anna Tsing  
*moderated by Gregg Mitman*

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Cover Photo: An oil palm plantation in Grand Cape Mount County, Liberia, operated by Sime Darby Plantation. Sime Darby is the world's largest palm oil plantation company by planted area. It was granted a concession by the Liberian government in 2009 for a 63-year lease on up to 220,000 hectares to grow monoculture oil palm. Still from *The Land Beneath Our Feet* (2016). Photo credit: Sarita Siegel

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# Preface

Few scholars have been as influential as Donna Haraway and Anna Tsing in imagining new ways of being in a multispecies world at the edge of extinction. Donna Haraway, Distinguished Professor Emerita of the History of Consciousness department and the Feminist Studies department at the University of California, Santa Cruz, has continually pushed the field of science and technology studies in new directions, traversing and weaving together work in feminism, animal studies, ecology, science fiction, developmental biology, and the history of science, among other fields, into a distinctive voice committed to the flourishing of human and nonhuman life and in search of a more equitable and just world. Anna Tsing is Professor of Anthropology at the University of California, Santa Cruz. Between 2013 and 2018, she was a Niels Bohr Professor at Aarhus University where she led the Aarhus University Research on the Anthropocene (AURA) group. She brings to her work an openness and curiosity to the multifarious entanglements of human and nonhuman life and, through her mastery of the arts of noticing and her gifts as a storyteller, opens our eyes to the many possibilities of living on a damaged planet.

We were delighted to have these two creative and inspiring thinkers join us at the University of Wisconsin-Madison, in a wide-ranging conversation on the Plantationocene—a proposed alternate name for the epoch often called the Anthropocene—on April 18, 2019. The conversation took place on the University of Wisconsin-Madison campus, the ancestral lands of the Peoria, Miami, Meskwaki, Sauk and Ho-Chunk peoples, who were forcibly displaced from their home areas through acts of violence and dispossession. Over the course of the evening, the discussion spanned from the possibilities and limits of the Anthropocene as a new geologic epoch, to the enduring legacies of the plantation, to the symbiotic and mutualistic associations that constitute all forms of life, to the capacity of joy and play in a world facing warming temperatures, rising seas, accelerating species extinction, and widespread land dispossession.

## **Gregg Mitman**

*Vilas Research and William Coleman Professor of  
History, Medical History, and Environmental Studies  
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A grove of *Hevea brasiliensis* in Liberia. Unknown to Africa, the tree, which grew wild in Brazil, was domesticated in the Malay Archipelago, and introduced to Liberia as a plantation crop in the early 1900s. Courtesy of Gregg Mitman.

## Reflections on the Plantationocene: A Conversation with Donna Haraway and Anna Tsing

### Gregg Mitman

Well, welcome. Thank you so much for being here. It's an honor and delight to have you both here together. I want to start with this concept that we've been hearing a lot about lately, the Anthropocene—this notion of the age of the human, that we are now living in a geologic age where humans are a geomorphic force on the planet at the planetary scale. I know both of you have somewhat different relationships to this concept, and I'm wondering if you could just tell us a little bit about what possibilities it offers, what limitations it poses, and why it angers you so, Donna?

### Donna Haraway

Or does it still?

**Mitman**

Let's begin there.

**Anna Tsing**

I use the concept of the Anthropocene despite acknowledging the importance of many criticisms, including Donna's, concerning how this word can mislead us. There are two reasons that I use the word anyway. Maybe a third reason is my general position that it's better to try to add meanings to words rather than to subtract words. But there are two substantive reasons. The first is that it's the term that allows interdisciplinary conversation between natural scientists and humanists, and I think that conversation is essential to learning anything about what's going on in our planet these days.

The second reason has to do with some of the very worst things about the term's Enlightenment legacy. The term appeals to a false universal of homogenous "Man," which was created with a white, Christian, heterosexual male person as the basis for the universal. Paying attention to that legacy can help us to figure out what's happening on the planet. It allows us to ask, for example, why so many landscape modification projects were made without thinking at all about what their effects might be on the people who live around them as well as local ecologies. That problematic legacy can help us focus in on the uneven, unequal features of planetary environmental issues.

**Haraway**

It's not that I disagree with anything that Anna said, and I also tend to want to work by addition and not by subtraction, multiplying terms to a point where you can foreground them and background them to do different work differently situated.

Also, I think the term Anthropocene has simply been adopted, and that it is no longer a question about whether to work within this category in productive ways and in the kinds of alliances that it encourages. I share very much with Anna the sense that my natural science colleagues understand the Anthropocene and can speak to me or to others about it while other terms—like Capitalocene, for example—kind of put them off. But this strength is also a problem. My natural science colleagues—and for that matter myself and my colleagues in general—have a tendency to think that apparatuses and terminologies like, for example, climate change are going to be translatable somehow to all parts of the world, even if the phenomena in question are experienced differently.

For example, the astute peoples of the circumpolar north have developed Indigenous vocabularies and both analytical and experiential ways of talking about the changes in the ice, the changes in the waters, the changes in the position of stars in the sky because of the way sea ice and fog will refract differently and so on. These people who live on the land might react to the notion of climate change as another southern importation that tends, yet once again, to make it almost impossible to propose local terms for analytical work. I want to nurture—to somehow force, if necessary—the attachment sites and contact zones so that all of the players have to somehow learn each other's idioms in a way that changes everybody so that no one remains the same as they were at the beginning and can perhaps find more collaborative, decolonial ways to address urgent problems. Often, Indigenous people are forced to learn southern idioms, but the reverse is much less true. That is not tolerable.

**The plantation disrupts the generation times of all the players. It radically simplifies the number of players and sets up situations for the vast proliferation of some and the removal of others.**

The power of a term like Anthropocene, its importance, has a very problematic quality. Then I'm also less generous than Anna about the potential of remembering the Enlightenment dimension of the "Anthropos" and of "Man" because I experience, in fact, among my colleagues across activist and scholarly worlds, a tendency to think that Anthropocene really does mean a species act. That the problem really is humanity, not "Man" in the Enlightenment sense, but humanity in its evolutionary social history on this planet—its increase in numbers, its increase in demands. This strengthens the illusion that turning all that is Earth into resource for humanity is inevitable, if tragic.

There's a way in which the Anthropocene is considered a species act as opposed to an historical, situated set of conjunctures that are absolutely *not* a species act. Most peoples on this planet have precisely *not* lived and exercised the same kinds of processes that break generations, that radically simplify ecologies, that drastically force labor in a mass way that creates a kind of global transformation

and global wealth that is in and of itself genocidal and extinctionist. That is not a species act; it's a situated historical set of conjunctures, and I think to this day the term Anthropocene makes it harder, not easier, for people to understand that.

### Mitman

You talked about proliferation of terms and the importance of that in terms of generative thinking. You yourself have really helped us with that in generating some more 'cenes beyond the Capitalocene. In the midst of a conversation around the Anthropocene that you and Anna had at Aarhus a few years ago, you said, "Well, what about the Plantationocene?" We're very grateful to you for that, because it's something we've taken up here and are really playing with and thinking deeply about. So, what is the Plantationocene? Why did you feel the need to introduce that term? Maybe we could just begin with this question: what is a plantation? This is actually not so simple. We've been wrestling with that definition here in the conversations and seminars we've been having.

### Haraway

We were wrestling with it, too. And I think this goes back to your introduction, to the notion of land. In that conversation at Aarhus, we had an anthropologist who was studying palm oil plantations and other extractive modes of agriculture and elimination of mixed forest along rivers in Malaysia. We had a landscape historian who was astutely attuned to the ways multiple enclosures in Britain and Europe changed landscape forms and modes of living across species. We had Anna with both the work in Southeast Asia with the Meratus Dayak and with the transformations in Borneo from the implantation of industrial forest and the elimination of various kinds of swidden agricultural and forest living practices as serious systems for sustenance as well as market exchanges. We had this range of concerns, including a sense of needing to think about the plants, to actually care about the plants and their companions, human and not.

There is a way in which the Plantationocene forces attention to the growing of food and the plantation as a system of multispecies forced labor. The plantation system speeds up generation time. The plantation disrupts the generation times of all the players. It radically simplifies the number of players and sets up situations for the vast proliferation of some and the removal of others. It's an epidemic friendly way of rearranging species life in the world. It is a system that depends on forced human labor of some kind because if labor can escape, it will escape the plantation. The plantation system requires either genocide or

removal or some mode of captivity and replacement of a local labor force by coerced labor from outside, either through various forms of indenture, unequal contract, or out-and-out slavery. The plantation really depends on very intense forms of labor slavery, including also machine labor slavery, a building of machines for exploitation and extraction of earthlings. I think it is also important to include the forced labor of nonhumans—plants, animals, and microbes—in our thinking.

So, when I think about the question, *what is a plantation*, some combination of these things seems to me to be pretty much always present across a 500-year period: radical simplification; substitution of peoples, crops, microbes, and life forms; forced labor; and, crucially, the disordering of times of generation across species, including human beings. I'm avoiding the word reproduction because of its productionist aspect, but I want to emphasize the radical interruption of the possibility of the care of generations and, as Anna taught me, the breaking of the tie to place—that the capacity to love and care for place is radically incompatible with the plantation. Thinking from the plantation, all of those things seem to be always present in various combinations.

### Tsing

I'll just add briefly that the term plantation for me evokes the heritage of a particular set of histories involving what happened after the European invasion of the New World, particularly involving the capture of Africans as enslaved labor and the simplification of crops so as to allow enslaved laborers to be the agricultural workers. In many small, independent farming situations, dozens of crops are raised that need to be tended by farmers who are invested in attending to each one. In designing systems for coerced labor, ecological simplifications entered agriculture. The plantation was precisely the conjuncture between ecological simplifications, the discipline of plants in particular, and the discipline of humans to work on those. That legacy, which I think is very much with us today, is so naturalized that many people believe that that is the meaning of the term agriculture; we forget that there are other ways to farm. The plantation takes us into that discipline-of-people/discipline-of-plants conjuncture.

### Mitman

I'm curious, Donna, you mentioned that you thought forced labor was an integral part of the plantation. Yet we see today, for example, particularly on oil palm plantations, which is a huge issue right now across many parts of the world,

work being done through paid wage labor. It's not forced labor, and yet there is still this notion of ecological simplification, which I think is really, really critical and which both of your work has really brought to us. In the context, say, of rubber plantations in Liberia, you had more than 15,000 people working a modern, industrial plantation by hand, not by machines. Do we need to think about the plantation in the context of forced labor? Or do we need to think about it in the context of just large-scale manual labor?

### Haraway

I would not for a minute equate hereditary human slavery and wage labor. I think there is a tremendous, obvious violence in any such equation. On the other hand, the disciplining of human labor in such a way that reduce the degrees of freedom of the laborer to do anything other than that demanded labor is part of what I mean by the term *force*. And maybe a radical reduction of degrees of freedom for determining lifeways, food-getting practices, where your children are going to work, at what age your children are going to work, and where you're going to live. This existed in the older systems of plantations that didn't rely directly on hereditary slavery but other modes—for example, various kinds of tax systems and constricted wage labor systems. Plantation agriculture in Hawai'i, for example, was never directly slave labor, but it was differentiated by racial group. It depended on



A Firestone worker skillfully cuts a “V” into the bark of the rubber tree, *Hevea brasiliensis*, out of which the milky-white sap, latex, will flow. In the 1920s, natural rubber was the fourth largest import into the United States and drove the development of plantations around the world, including this one in Liberia by the Firestone Tire and Rubber Company. Courtesy of Gregg Mitman.

long-term contracts with spatially displaced people, which amounted to forced labor, and it produced and reproduced very distinct racial categories that trouble the Hawaiian Islands to this day. This was not free labor.

I would also argue in relation to, say, modern chicken farming, which I regard as a plantation system. The contractors in modern chicken farming might be “independent contractors,” but the nature of their contracts is such that they really have almost no degrees of freedom. They have to buy chicks of a certain genetic composition at a certain age and feed them a certain feed formulation. There is a certain kind of chicken housing situation that requires certain kinds of technological upgrading for the management of air circulation, waste disposal, etc., in a highly regulatory apparatus that requires massive investment that produces a form of debt farming. It produces a kind of mortgage captivity. This is also true in Midwestern monocrop grain farming; the mortgage captivity of even supposedly wealthy farmers is legendary. Then chicken farmers have to sell the chicks; they must gain weight at such and such a rate, they have to be sold at such and such an age, and so on and so on. This is not hereditary slavery nor is it wage labor. It’s independent contract labor. But I think it is a system of radical reduction of the possibility of what Marx might call vital labor. It’s the elimination of vital labor or the radical reduction of vital labor. And this disordering and blasting of vital labor is a multispecies affair.

### **Tsing**

I’ll just add two small points. One is to recall into the conversation anthropologist Sidney Mintz’s argument that plantation enslaved labor inspired factory wage labor through its model of discipline and alienation. Wage labor, which of course followed plantation labor, was modeled on two aspects of it, discipline and alienation, so that even with wage labor we live in that legacy of the plantation. The second point is the importance, which I think Donna already mentioned, of displacement and dispossession. In every case I can think of, plantations dispossess both Indigenous people and indigenous ecologies and bring in not only exotic plants but people from other places. The oil palm plantations that I’m familiar with in Indonesia, for example, have brought in Javanese transmigrant laborers just as they displace the local people who lived there before. While the people are not a part of a system of indenture, they are there in part because they’ve been removed from their home places and sent to this other place to work on these plantations. At the same time, local people are being asked to give up the places that they have lived for millenia.



Pickers harvest strawberries from a field in California. The majority of farmworkers do not have the security of year-round, full-time employment. The **Economic Policy Institute** estimates that California farmworkers earn an average \$17,500 a year, which is little more than half the annual earnings of a full-time equivalent worker in California. Photo by **Glenn Nelson**, 2009.

### Mitman

It seems to me—and maybe this is what you were thinking about as you introduced the term—that the act of dispossession that happens in any plantation, anywhere on the planet, really points to the deep environmental and social inequalities that emerge and allow certain human beings to flourish, like many of us in this room, and others to suffer in that process in a way that the Anthropocene doesn't capture because there is, as you said to begin with, this universal "we."

### Haraway

Or, I think working from the plantation as a starting point—or the Plantationocene as one of the categories within which to think, not to the exclusion of others—really does encourage remembering that point with force. I'm thinking of the

Central Valley of California or the strawberry land around the Monterey Bay and the radical importance of immigrant labor that is displaced from home places. There's a serious climate migration right now across the southern U.S. border into Texas and California. People from Guatemala, El Salvador, and Honduras—still losing land for the reasons for which they've always been dispossessed in the inequalities of Central American society—are also abandoning farms as it becomes impossible to get a reliable harvest because of climate change. There is this radical loss of home. Yet the required labor force for the crops of the Central Valley, which in turn depend on a water engineering system that turns water into a mined resource so that you have depletion of the aquifer and subsidence of the soils and desertification across this area, is composed of an essentially coerced labor force that's highly vulnerable and kept vulnerable by law and by practice—kept illegal and deportable, for one thing. This kind of vulnerability goes with that type of farming; it's not slavery, but it is the kind of labor force that I associate with plantation conditions.

I think another aspect of plantation transformations of place is not just unsustainability but out-and-out exterminism. I think of the desertification of the Central Valley. I think of the degree to which plantations destroy their own base, exhaust soils, exhaust peoples, exhaust plants and animals, and proliferate pathogenic pathogens. There are many kinds of farming that are destructive, but I think it is diagnostic of plantations that they have a relationship to exterminism that is more intense.

### Tsing

On the topic of dispossession, I just wanted to add a vivid image from the period when they were making the oil palm plantations in the place that I did my research in Kalimantan, Indonesia. At that time, they were not only getting rid of local villagers, but also of the rain forest with which those people lived, and animals were running out every day from that now



Pathogens and pests of the plantation. Top: coffee berries show signs of infection by the fungus *Cercospora coffeicola* (photo by Scot Nelson, 2016). Bottom: a coconut rhinoceros beetle, *oryctes rhinoceros*, common pest of palm plants (photo by Arian Suresh, 2015).

dwindling forest. I had never seen so many animals in my entire life. Animals can hide very well in the rain forest, so when you walk around in the rain forest, you don't see animals. I saw all of the exotic animals because they had no place to go, and they were running out, displaced from the forest. It's a vivid image to me of nonhuman displacement.

And because Donna already brought it up, I'll say a word about the pathogens, which I think are incredibly important. Plantations cultivate, if you would, pests and pathogens, and in several different ways.



Top: fungal disease *Fusarium wilt*, also known as **Panama disease**, has severely impacted banana cultivation (photo by **Scot Nelson**, 2017). Bottom: the infamous **boll weevil**, *Anthonomus grandis*, feeds on the bud of a cotton plant (photo by the **U.S. Department of Agriculture**, 2007).

One is that plantations gather pathogens and change their reproductive strategies because of the monocrop availability of huge amounts of food resources for the pathogens. This swamps an area with pests and pathogens. Second, plantations allow sometimes quite rapid transformations of pests and pathogens that create forms of virulence that didn't exist before. The pathogens are experimenting with ways to make use of the bounty of food in the plantation. At the same time, plantations are linked in global commerce. They are often sending the same materials back and forth across the globe, allowing hybridization across closely related but geographically separated pathogen species. These hybridizations produce pathogens that can attack new hosts and in innovative ways. So we see a proliferation of newly virulent pathogens that is really unheard of in the world as far as I can see. They do not stay on the plantation. They make other kinds of agriculture, such as small-holder peasant cultivation, much more difficult than they were before.

### Mitman

We could talk about the industrial ecologies of the plantation and the way in which technoscience is mobilized to sustain that and to reproduce it. So much of your work—both of your work—is really not about ecological simplification, but is instead

thinking about multispecies flourishing, even in plantations and highly disturbed landscapes. Donna, you originally were trained in biology and worked with one of the foremost ecologists of the 20th century, George Evelyn Hutchinson, if I'm not mistaken. And Anna, you hang out with mycologists and ecologists and foresters all the time. I am wondering why you think it's important to ponder and think with other lifeforms that we human beings are in relationship with? What possibilities does that create for thinking about alternative futures? What is the humanities when we start thinking about other forms of life that live in very, very different ways than humans do?

### Haraway

I'm astonished that this isn't simply the default position of everybody's thinking. Gregg, this is a question from you that's particularly rich. I'm thinking of your first book, which was a marvelous treatment of community ecology in the Chicago School and the work of W.C. Allee. This was an ecology that emphasizes mutualist interactions and cooperative biological metabolisms. I think we both have shared throughout our entire thinking lives tremendous loyalty to the biologists and the sociologists and the activists and the farmers and the rest who understand the connectedness, the relationality of everything that is. Now also, even settler scholars—we—have no excuse for not knowing the extraordinary contemporary writing and scholarship from Indigenous authors on constitutive relatedness of many kinds. For example, I'm thinking of Zoe Todd's work on kin-making and fish pluralities. As Scott Gilbert put it, we are all lichens. Anne Pringle may be in the audience and especially appreciate this very important truth of the world: the understanding that critters in the world are compositions that hold together well enough to get through the day, and that in living and dying in concert with each other, in building and decay and catabolism and anomalism or whatever the 19th century physiologists wanted to call it, we are earthlings, living and dying with each other. And this way of affirming being an earthling is one kind of counter to the transcendentalism of philosophy and science and politics and the various trajectories of, essentially, commitments to deathlessness. I think one of the aspects of being committed to biology is being committed to mortality, that we live within the time-space domains of the living and dying. I am not and never have been a pro-life activist, including in my biology.

I want to say a word about G. Evelyn Hutchinson, who was indeed my dissertation adviser, thank the powers of the Earth. It was an extraordinary privilege, in no small part because this was a man who was committed to biogeochemistry,

## What gave us the crazy idea that sociality was limited to humans?

had read the Russians, who was alert to the metabolisms of the planet before Lovelock and Margulis invented the term Gaia, and who was deeply interested in questioning the systematicity of the exchange and metabolisms of the planet. He was a mathematically astute materialist systems thinker. He's the one who first brought up global warming to me when I was a graduate student in the late 1960s because he was aware that the data were already coming. The word Anthropocene,

of course, did not exist, but he was already worried about what was going to happen as the reproductive linkage of pollinators and flowers would get out of sync because of the different hatching times of insects compared to flowering times. He was already deeply worried about the disruption of generational synchronicity in organisms that needed each other, and he was always thinking in terms of the rocks as well as the critters, the waters, and the great metabolic cycles that make the earth what it is in the zones where life can possibly exist. Then, he was spending his summers looking at Italian illuminated manuscripts because he was really interested in the birds in the marginalia of 13th-century Italian prayer books and so on. It was a kind of curiosity about the metabolisms of the world that I feel like I inherited. This was generational kin making.

### Tsing

Let's bring the conversation back to the question, why work with biologists? A colleague of mine, Shiho Satsuka, is writing a book called *Undoing the 20th Century*, and even the title alone suggests that part of the problem is a rather strange state of affairs where we didn't work with biologists. I don't know how many of you out there are social scientists as I am, but what gave us the crazy idea that sociality was limited to humans? It's such an extraordinary thing when you look back on it now, that we could come up with a whole set of disciplines in which only humans were important. That was a big part of this 20th-century program for human advancement, which didn't involve anybody else except us.

You still see it very much today in all these programs who want to send people off to Mars and other places to establish a new planet. It turns out that we can't live by ourselves. All of the kinds of interdependencies across species, across many

kinds of organisms, are absolutely essential to life, and we can't do it alone. In that sense, just to describe the world the way it is now, it seems to me we really need to know both human and the nonhuman dynamics, revising our ideas about social relations into a much broader sense of the term. It's about time, I guess, that we all started thinking about our situation in a way that includes plants, animals, microbes, and more, before we destroy them all.



A crab spider rests on the non-photosynthetic plant, *Monotropa humile*. Because the plant cannot perform photosynthesis, it relies on a **mycorrhizal fungal network** to provide it with the sugars and nutrients necessary for its survival. Photo by **Daiju Azuma**, 2006.

### Mitman

Yeah, I agree. It is about time. It's striking how much even within just the discipline of biology, Darwinian evolution so reigned and so pushed out symbiotic thinking and symbiosis and mutualism, as if these were somehow aberrant categories to think with. That really reinforced this notion of the autonomous individual self, whether it's in biology or whether it's in the humanities.

Why now? Why do you think there is suddenly this recognition? We can go back to people like Allee, Proudhon, and generations of past biologists that were really thinking about mutualism all along and yet were really marginalized. Now we see this moment when we recognize this is really important work to be thinking with. It's curious. Why now?

### Haraway

I think there are many ways to consider that question, and I think some of it has to do with the technological capability within the biologies to actually show phenomena that were thought possibly to exist but truly could not be shown. There's an irony in the way in which the apparatuses of molecular biology, accused of so much reductionism, allow the demonstration of mutualisms at every level of being.

For example, today it is possible to study in chemical and ultrastructural detail the cues for larval settlement from a bacterium releasing a molecule that can be discriminated in the water column at such and such a dilution that can interact at such and such a time in developmental history and result in settlement and metamorphosis of a particular invertebrate, and so forth. These things were simply not technically possible to show and confirm, and knowing them matters.

But I also think there are probably more profound explanations. I think that systems theories deserve a lot of credit and blame. Systems thinking challenges the categories of preformed units and relations in organizational arrangements. Relating, active like a gerund, not units plus relations, is at the root of much systems thinking. I think that the rearrangements of capital, the rearrangements of finance, are every bit as much tuned to these kinds of elaborate mutualisms as the biologies are. That reminds me as an historian of biology that biology is responsible for producing the organism as an entity in the world, which is to say a system of production, reproduction, and command control. This includes the apparatuses of the division of labor, of executive function, and things like feed conversion ratios that are critical to the animal industrial complex. I remember the degree to which the calorimeter was part of the labor discipline of the plantation and its offspring, the factory. Biology has been part of the worlding of the Capitalocene at every step of the way, and biology is also crucial to resistance and regeneration. My point is that worlding—making worlds—is in play and at stake in doing biology.

Political economy and natural economy have been twins, and it's still true. I don't think of the biologies of mutualism and so forth as in any sense innocent. I think it's an historical conjuncture, and I'm interested very much in allying myself with the forces within this that I think are conducive to worlds that I, we, want to live in—*can* live in. The enemy is not the mis-named reductionist; the enemy is the extractor and the exploiter.

### Tsing

The only way I know how to answer a *why now* question is through historical conjunctures. But before I get to an example, I want to add to Donna's point about technological capacity with another piece of that story, which is that the ease of getting DNA sequenced today has created histories of other organisms that we couldn't have before. Phylogeographies now are so much easier and more developed. I learned from my colleague Paulla Ebron, for example, that

the *Aedes aegypti* mosquito that carries yellow fever and now Zika and lots of other diseases is a particular species developed on slave ships coming to the New World. It combined features that before were only known separately, from the Mediterranean, on the one hand, and from West Africa, on the other. The Mediterranean feature of living only around human water sources and the West African feature of carrying yellow fever came together in a new variant of *Aedes aegypti* that didn't exist before. This is the kind of history of nonhuman organisms that we couldn't have done a few years ago, so it's really extraordinary to me that that kind of work can be done. It changes our understanding of the experience of slavery to understand the burden of diseases of enslaved people.

Before we get off the *why now*, I wanted to point to one tiny conjuncture, which has to do with Donna's own work. I'm just amazed at the wonderful communication between a developmental biologist Scott Gilbert who is a friend of Donna's and Donna in pushing forward a field. Scott Gilbert himself has been responsible for a lot of the theoretical thinking about how organisms develop together across species rather than autonomously. He is also reading Donna's work, so that in the most recent edition of his textbook on ecological evolutionary developmental biology, there's a mention of the Plantationocene in the theoretical section at the end.

These threads came together at the time Donna came to Aarhus; Scott Gilbert was there also. We had another developmental biologist giving a talk and he said, "During my training, I read Scott Gilbert during the day and Donna Haraway at night." Hopefully we're producing a new set of young people who know how to read across some of these boundaries.

### Haraway

Little did he know that Scott Gilbert did a master's degree in history of biology with me at Johns Hopkins, while I brought my graduate students in history of science into Scott's lab for various kinds of lab work that he set up for them. This is an old symbiosis that works through generous institutions and personal friendships and lateral mentoring.

### Mitman

It's about time for us to open up the discussion to the collectivity, but I do want to ask you one last question. Inevitably, in these seminars that we've been running, in these round tables, the question of hope comes up—and heart. Anna, you've

talked about the hope of thinking of life in the ruins. And Donna, you've spoken about hope and staying with the trouble. I'm wondering if you can say more about that. What does it mean to hope in living in a damaged planet?

### Tsing

I think we don't have any choices except to try to do our best to live with others and go forward. I think we need all kinds of storytelling and appreciation, from science through every other genre we can think of, in order to do that. I will also say that because one of the responses to my book on mushrooms was, *oh, everything's going to work out just fine because you're so optimistic*, that really

turned me towards the Plantationocene to say, *I don't think that's true*. We can't just sit back and think everything's going to work out. Part of what going forward means to me is telling some really terrible stories about what's going on in the world. I feel that humanists and social scientists have lost track of how to do that. We're so busy generating stories of hope sometimes, and I'm implicating myself too, that we have to relearn some of the arts of storytelling for telling terrible things that we need to know about. These are necessary for our ability to work well with others.

### Haraway

I think that we need to cultivate the practices of keeping heart, of giving each other the capacity to get up in the morning with a certain capacity for play and joy. This is not simple, and it takes many kinds of sensibilities, particularly in times of accelerating crisis and mass extinction and many other things. For me, part of what helps is a firm conviction that we really do need one another's sensibilities here, including ones which insist, *not so fast with your happy story, lady*. We really need each other's sensibilities to collect up the range of skill and affect and commitment that will enable us to live in a thick present. I don't so much have hope as what I call heart, because I try to cultivate a way of thinking that is not futurist but rather thinks of the present as a thick, complex tangle of times and places in which cultivating response-abilities, capacities to respond, matters.

Part of what going forward means ... is telling some really terrible stories about what's going on in the world.

I was instructed in this by Deborah Bird Rose and her work with Australian Aboriginal teachers from the Yarralin community in the Northern Territory of Australia. Her teachers talked to her about how a serious adult person takes care of country—the Anglo translation of that extraordinary complex of ancestors, living beings both human and more than human, landscapes, and more that constitute country. Contemporary living people are responsible for taking care of country, which means facing those who came before so as to leave to those who come after less wild, less blasted country. You don't look forward toward those who come next. Mind you, the people who are telling Deborah Bird Rose this have experienced the elimination of approximately 80 to 90% of their own genealogical lines and dream lines and tracks. These are people who have been subjected to the end of the world in an extremely radical way, who are talking to her about continuing to take care of country and to continue to care for the lines that still exist as well as being somewhat open to building in new dream tracks and new lines in country, to make kin in new and old ways. There's a complex set of relationships here.

But this kind of present—the Anglophone word for the time of being serious about taking care of country—is about a hundred years in duration. It's the time of the possibility of telling stories about named beings, people whose names you remember or somebody remembers, or an animal you encountered. The storytelling has the quality of a life story, that's the present. The present is about a hundred years, not instantaneous but thick.

I like that way of thinking about how we somehow cobble together the capacity to do the kind of repairing that can be done, to block that kind of onrushing damage that can be blocked, to affirm mortality and to refuse various kinds of techno-optimism or techno-pessimism and to truly refuse transcendence in all its forms, which involves a kind of understanding that there will be no status quo ante. There will be no going back to some fully repaired place. That is not the same thing as saying there can be no repair, restoration, restitution, cobbling together again, and including new stuff, beings who are coming into the world, ways of living in the world that haven't been on this planet before.

I think every single time critters play with each other, a couple of dogs, for example, they're using their inherited repertoire. They're choreographing in a biologically pre-saturated way, and in any play bout worth the name of play, they take that inherited set of capacities and they do something with it that has

quite literally never happened on this planet before. Play is exactly that. It is that taking up of inheritance in choreographies and interactions that produce what has truly never been on this planet before. Play is sustained by joy. Nobody is going to stay in a play bout unless it's sustained by joy. For one thing, it's too dangerous. Play is never safe. There's something about that that feels to me really fundamental to being an organism.

### Audience Question

A number of livestream viewers are very interested in the idea of joy. They're wondering if you could speak a little bit more about joy that sustains within the work you do and the work that those interested in speaking in a dying world will do to sustain us.

### Haraway

I want to appeal to Deborah Bird Rose again to do this. She died a few months ago, and she's been much on my mind because she gave me, us, so much. She wrote in recent years about *shimmer*, the shimmer of the living world and the *bling*, the bling of the living world. She did some very interesting studies of the flying foxes—the bats, the big bats—and the flowers that they pollinate. They are highly endangered, they're highly vulnerable, these bat-flower associations, and Deborah was really tuned to the Aboriginal peoples who most care about and knew about the particular pollination relationships of these beings. She was deeply committed to the wellbeing of the flowers and the flying foxes and their worlds. She talked about how, when she engaged in working on these very troubling but important matters, she experienced the shimmer, the sheer bling of life, when she watched one of those flying foxes. The things that we care about sustain us because of their bling.

It's not all that hard to play. It's actually not all that hard to sustain joy if we let ourselves. Joy is not innocence; it is openness to caring. If we let pleasure in, if we let the light in, if we let it seep in, there's a kind of leaking of the bling of the world. Really we live on an astonishing planet, and we may as well just let the astonishment in.

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Gregg Mitman, Donna Haraway, and Anna Tsing answer audience questions following their **discussion of the Plantationocene** at University of Wisconsin-Madison on April 18, 2019.

Photo by **Romulo Ueda**.

