

Transcription

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Episode 14: Time and the interplay between human history and planetary history

<https://soundcloud.com/user-760891605/episode-14>

Sound bite: “How do you organize the university in the 21st century in ways that don't just nod and congratulate interdisciplinarity but actually integrate it into the very structure of the institution?”

Host intro: *[Timescales: Thinking Across Ecological Temporalities](#)* is a book that examines the human inability to see and to witness time as an element of environmental catastrophe. The volume brings together humanities scholars, scientists and artists to develop new ways of thinking about the world with its human and nonhuman entanglements and diverse systems of knowledge.

[Carolyn Fornoff](#) is assistant professor of Latin American culture at the University of Illinois at Urbana-Champaign and is co-editor along with [Bethany Wiggin](#) and [Patricia Kim](#), of *Timescales*. Fornoff is joined here by three volume contributors: [Jen Telesca](#), assistant professor of environmental justice in the Department of Social Science and Cultural Studies at Pratt Institute, and author of *[Red Gold: The Managed Extinction of the Giant Bluefin Tuna](#)*, [Wai Chee Dimock](#), editor of PMLA, who teaches at Yale University and whose latest book is *[Weak Planet: Literature and Assisted Survival](#)*, and [Charles Tung](#), professor of English at Seattle University, author of *[Modernism and Time Machines](#)*. This conversation was recorded in December 2020.

Carolyn Fornoff: Hi, this is Carolyn Fornoff, one of the co-editors of *Timescales*. I'm located at the University of Illinois in Urbana-Champaign in the Spanish department where I work on contemporary Latin America. One of the big questions that we were hoping to grapple with in this volume was the question of how time has seemed to shift in the Anthropocene and the way in which phenomena like climate change have made it impossible to think about planetary history and human history as separate things. We open the volume with the example of sea ice melt, which I think shows this temporal collision. These ice caps were formed over 34 million years ago, and now, they're melting incredibly quickly. This year, the Arctic sea ice shrank much earlier than any previous year due to a Siberian heat wave. And of course, this melt also has implication for the far-off future with scientists predicting sea level rise of 2.5 meters, which would be enough to displace entire cities. I think this example sort

of shows us this simultaneity of deep, geological time and future speculations. The enormity of these temporal scales can be kind of difficult to wrap our heads around. So, I wanted to sort of kick off our conversation by passing the baton to Charles Tung, who is a professor of English at Seattle University, and just last year published a monograph titled *Modernism and Time Machines* with [Edinburgh University Press](#). So, Charles, I'm wondering if you'd like to tell us a little bit about your chapter and the modernist, aesthetic techniques that you discuss there. And the way they help us toggle between past, present and future.

Charles Tung: Sure, I'd be happy to. I'm so excited to be a part of Carolyn Fornoff's, Bethany Wiggin's and Patricia Kim's volume. It's very exciting, and I'm really happy to be here also with Jen Telesca and Wai Chee Dimock, in conversation. So, Charles Tung here. I'm coming to you from [Seattle University](#). I'm very interested in clocks and time machines. My piece for the volume, the title of which is *Time Machines and Timelapse Aesthetics in Anthropocenic Modernism*, thinks about ecocinema and the timelapse shots of melting ice or the rhythms of cities and thinks about the way in which these views of time elapsing on a much bigger scale is born in literature at the end of the 19th century with this new trope of the time machine. For me, time machines help us to reflect not only on the stories that we think in, and think through, the different tropes and metaphors that we think in, but also the concepts and the forms of perception that we need to think in and through especially when it comes to massive objects like climate change. One of the sort of standard truisms now is that we can sense and feel the weather, but we can't really perceive climate change because it's happening on such a massive scale. So, time machines for me, allow us to practice a kind of hyperopia, farsightedness; they allow us to zoom out and to scale up in order to see larger timescales. For me, one of the key things about time machines is that what comes in and out of you is really a function of relative rates. [H.G. Wells](#), when he describes the time machine, uses the example of a bullet or bicycle spokes in relation to how an eyeball sees. We can really think about that in relation to, say, a high-speed camera or to the technique of timelapse photography. And what we're really tapping into when we think about time machines and think about timelapse, especially in the ecological context, is not that we're grasping some ultimate, grand, unified and singular time, planetary time, but that we're really getting a view of the multiplicity of different times and their relation to each other.

CF: I think that idea of the multiplicity of time versus linear time really brings us to a provocative concept that's put forth in Jennifer Telesca's chapter, which she calls technocratic time. Jen is an assistant professor of environmental justice at the [Pratt Institute](#), and this year, she published *Red Gold: The Managed Extinction of the Giant Bluefin Tuna* with the University of Minnesota Press. Jen, I'm wondering if you can tell us a little bit about your experience observing [ICCAT, the International Commission for the Conservation of Atlantic Tunas](#), and how it brought you to understand how time is produced by bureaucratic governance.

Jen Telesca: Thank you, Carolyn. I am really delighted to participate in this conversation with Charles and Wai Chee and with you. I'm grateful for the platform that Minnesota has given us to work through these ideas. So, I should probably start by saying I spent about three years traveling through this network that Carolyn just mentioned, ICCAT, the leading institution for governing fish on the high seas. I think in many ways, what this volume allowed me to do is to think more deeply about something that I think many of us take for granted, which is how we in this modern, capitalist, consumer culture, indebted, feeling the legacy of colonialism and such, experiencing time. I start in the chapter with the premise drawn from anthropological inquiry that suggests that people don't just inhabit time, but that they make the time they inhabit. I'll say that again because it's kind of hard to wrap your head around it maybe at first, which is again, people don't simply inhabit time, but they make the time that they inhabit. And when I think of this idea in the context of the fieldwork that I conducted, I then am provoked to ask the question, how did the technocrats in this institution make the time now known as the Anthropocene's Great Acceleration? This is a period after World War II, around 1950 or so when we see various indices literally skyrocket. So, this is the hockey stick metaphor that people use to describe the escalation and fish capture, but also ocean acidification and other registers, too, like tourism, and various forms of pollution and such that have marked the signature in the stratigraphy of the planet. It's really by no coincidence that ocean governance, and in particular, the [U.N. Convention on the Law of the Sea](#), first emerges in 1958 at the same time as the Great Acceleration. So, I'm operating along the presumption that these meanings of time do not exist apart from the logics of power and accountability. So, to more directly answer your question, Carolyn, I think, what I observed ethnographically was the way in which the technocrats that I encountered endopted this understanding of time that had the following characteristics: As you mentioned, it's linear. It's ahistorical, it's unidirectional, it

progresses forward. And it's keen to project a future that, by definition, has not yet happened. So, as the [legal anthropologist Carol Greenhouse](#) states, this is time with a purpose. And in this case, given the extraordinary stakes of the economies around commercial fish, time here is money. What the chapter really does then is ask, how did the technocrats realize this conception of time, and I look at the dominant mode of what this institution does, which is it produces models and metrics and tables and statistical indices and the like. And these become the mechanisms by which the linear becomes operationalized, which in retrospect, collectively we've come to experience as the Great Acceleration. And really, the key here, too, is that the greatest mechanism of all is this mathematical formula emerging in the 1950s called [maximum sustainable yield](#), which has become so commonplace in fisheries management that it's not questioned at all by the people inside these kinds of zones. But I think it's super interesting actually, that in the edited volume you all paired my chapter with Charles's chapter, especially knowing what he just expressed, which is this idea that the time machine, the timelapse gets us a view of the multiplicity of different times in relation to one another. And this is very much what I observed when I was in the field beginning in 2011. The technocrats at this institution, again, the International Commission for the Conservation of Atlantic Tunas, adopted what they call the [Kobe matrix](#), which allows them to graphically image manifold futures in linear time; in speaking with colleagues of mine that do social histories of finance, I was always really struck by the fact that there's something very similar going on to the way in which the Kobe matrix spoke to the way in which traders on Wall Street swap currency, for example, also by using these probabilistic models as a way to profit off of volatility and speculate in the market.

CF: Thanks Jen. I think that that idea of speculation brings us to the next chapter that I'd like to discuss, which is Wai Chee Dimock's chapter, which reflects on extinction. Jen, listening to you talk makes me think about how ICCAT is essentially sort of the managed extinction or as you put it, in your very title of your book, right, *The Managed Extinction of the Giant Bluefin Tuna*. In Wai Chee Dimock's chapter, she focuses on the threat of extinction to amphibians, which she describes as sort of the canary in the coal mine of thinking about this fixed extinction that's underway. Wai Chee contrasts this with a passage by [Thoreau in the 19th century](#) that describes listening to frogs and this idea that, that that chorus can be endlessly repeatable. And so, it's sort of this rupture of this idea of futurity that's broken by extinction. I'd like to just introduce Wai Chee who is a William Lampson professor of English and American studies at Yale.

And this year, she also published a book titled, [Weak Planet: Literature and Assisted Survival](#) with the University of Chicago Press. So, Wai Chee, do you want to walk us through how extinction shapes our understanding of the future and also, how you bring that into conversation with Indigenous approaches to time.

Wai Chee Dimock: Yes, thank you so much, Carolyn. I'm just thrilled to be part of the collection and to be here in conversation with Charles and Jen. I'm especially happy because when I was writing my chapter, I talk about the frog and the extinction of amphibians at the present moment and thinking back to the 19th century. And then, I also talk about the rhetoric of extinction being used in the 19th century towards humans, especially Native Americans. So, in fact, it's very much just to use Jen's phrase, it was very much the case of managed extinction. These people are supposed to die out, they're already dying out. And even though Thoreau did not always ascribe to this kind of rhetoric, he did once in a while. Even though he was showing Native Americans in a very different light in some moments, he also showed them as close to extinction or already extinct. So, I ended my chapter by talking about how not-extinct, in fact, Native Americans, are. I talk about the Standing Rock Sioux Tribe and the [resistance to the Dakota Access Pipeline](#). So, it ended with that very vibrant sound of protest. And because the focus is on the pipeline in the essay, I don't really get to talk much about literature. So, I'd like to talk about the salmon and how Native Americans think of time in relation to the salmon. I'd like to read to you a poem by Jack Scoltock. The poem is called [Salmon](#).

He caught ten/He counted them again/He gutted/And stripped/Leaving the bones/Then carefully/Returned the bones/To the great river/The salmon/Would come again/The following year/And he would be there/Waiting

Just to return to the idea of managed extinction that is really behind the notion of maximum sustainable yield as calculated [by] technocrats, Indigenous peoples are not using this at all when they think about time and time is not linear for them. Nor is it a future that is always moving progressively towards greater technology and greater benefit for all. In fact, time is really both the future that is shared between humans and nonhumans; the salmon will come back next year and the following year and every year after that. And the very restrained fisherman who catches only ten fish would be there as well every year. And this is the future that will be shared between humans and nonhumans and is also a

restoration of the past. So, this continuity between past and present is because there is continuity between past and future, that time could be sustainable habitat for both Native peoples and the salmon. And so, it just seems a really powerful response to the kind of linear time that is at the expense of the tuna. And is also at the expense of Native peoples and humans, in general. There's a little backstory to this poem, and I didn't realize that when I was just reading the poem. I did a little research on Jack Scoltock, who is Irish, and this poem was published in a collection called [Black '47 Native American Poetry](#), and it's dedicated to the Choctaw Nation. So, the backstory here is there's a special friendship between the Choctaw and the Irish. This in the 19th century, in 1847, during the potato famine, the Choctaw, even though they were hardly affluent, they nonetheless came up with \$170 that they sent to the Irish for famine relief. From that 19th-century gift came a friendship that lasts all the way to the 21st century. Back in March or April, there was a story in The Guardian about a gift that the Irish sent to the Choctaw Nation for COVID-19 relief. So, this is a very tangible instance of the past that is carried forward into the present and into the future because as far as we can see, this friendship is just going to go on. Anytime there's a misfortune, catastrophe on one side, there's going to be help from the other side. It's a very different way of thinking about the ocean, the Atlantic; it's not just an ocean where you fish, where basically, you can monetize the yield of the ocean. Instead, the ocean is really a place that brings people from different continents together. It also brings to mind, because the salmon is also Pacific Ocean, it's both Atlantic and Pacific, it highlights the extent to which the ocean is and should be a way of connecting all the continents of the world. So, I'll just end with a little discussion of the importance of salmon to the Pacific Northwest, especially to the Arctic, just to go back to Carolyn's earlier point about how important it is to think about the Arctic because it is the canary in the coal mine because it is warming much faster than the rest of the planet. But the salmon is important to the Atlantic, as well, for one special reason, in that it has a symbiotic relation with the [Tongass forest](#). I'm thinking of a book by Amy Gulick called [Salmon in the Trees](#), and the argument is that in fact, 50% of the nitrogen that is so important as nutrients for the forest there, the temperate rainforest, the Tongass National Forest is near the Arctic, but it gets its nitrogen from the salmon. So, this is another way in which where the ocean becomes a way to think about the interconnection between land and sea. The salmon comes from the ocean, and it ends up being a kind of bearer of nutrients for the land and is really a kind of land-sea ecosystem that is so vibrant, because everything is interconnected.

CT: I would love to jump in at this moment if it's all right with everyone, and pick up on the complex relationship with the nonhuman that human histories have, and I'm thinking a lot, too, about Wai Chee's chapter in the book in which she talks about the ways in which thinking about the presence of animal life and their sounds and the absence of those sounds allows us to think about different pathways toward the future or toward futures in the plural. I have a friend who has said to me several times "don't give up on a better past." And that makes me think about the relationship to the past of the present and the different futures that seem to be barreling down toward us at a variety of different rates. [Mark Rifkin](#), I think three years ago published a book called [Beyond Settler Time: Temporal Sovereignty and Indigenous Self-Determination](#). And in that book, he talks about how we are trying to revise how we understand history and the present. We try to be more inclusive and offer temporal recognition, but in a sense, the underlying assumption that there's one time to recognize others and to bring them into, really kind of upholds the settler colonial fantasy of some kind of neutral, unified history and ubiquitous modernity and upholds the idea that there's a single—this is a quote from from his book—"a singular temporal formation that itself marks the sole possibility for moving toward the future." In literary studies, one of our famous scholars, [Fredric Jameson](#), has provided our discipline with a slogan that so many of us believe in, including me, which is to always historicize. One of the things that we're thinking about now, though, is that there are different pasts, and there are different histories and that that gesture, that critical gesture, always historicize in light of what Mark Rifkin's arguments are in his book, that that gesture to always historicize has never really been neutral, because it presumes these European coordinates of social life, sociality, governance, landedness as the basis to register processes of becoming. These are phrases from Rifkin. And that really reminds me of this famous incident where [Edward Curtis](#), the famous photographer, ethnological photographer who's really well-known for his documentation of Indigenous peoples earlier in the 20th century, end of the 19th, too, and for constructing this mythology of the American West. He had this photograph in 1910 called *In a Piegan Lodge*, an image of two Indigenous men, [Little Plume and Yellow Kidney](#), and between them is a clock. Very famously, he decides to take his original glass negative and to erase the clock in the photograph; we would call this today photoshopping the clock out of the picture. Scholars read this move as Curtis's attempt to create a historically seamless moment of quote-unquote, the Indian, a seamless moment of the premodern and what that does is it simultaneously

affirms the existence of this big clock of civilization that operates elsewhere. It sort of preserves this idea of a monochronic national time of the U.S. and of world history and even human history, from which Indigenous peoples for so long were excluded. But the move now is not to simply bring others into the one big history, but to acknowledge that there are in fact, multiple histories. And I think that really picks up, too, on what Jen was saying about the construction of time also to the nonhuman realm, the technological realm as well as the ways in which that realm is patched into policy and economics. The kind of conversion of life into a resource for maximization and optimization as opposed to the conceptions of time and life as multiplicity seemed really striking to me and to think about the future, the immediate future that has this singular larger, but absent vanishing point. In what ways is that really different from a conception in which we have a variety of long-term futures that are now reaching into the present from large-scale, determinate positions. The kind of “what if” function of fiction, in this sense, works a little bit like scientific modeling of those various futures that come to us from different places at different rates. And with different outcomes and possibilities as well.

WCD: I just want to add to Charles’s point about how important it is to not have a single, unified clock that is assumed to be operative for everyone. And I think especially in the context of climate change. I think that Indigenous peoples have made this argument for some time; I’m thinking of [Kyle Whyte](#) who argues that even the very term “Anthropocene”—he’s quite critical of that term—because going on the assumption that this is the first time that humans have had such a profound, disruptive impact on the planet that we are creating a new geological era, for Native peoples that really is not the case because back in the 16th century, 17th century, all the disruptions that we’re seeing now, uprooting our inhabitants, pandemic, famine, all of those things were happening to Native peoples. It accounts for the genocide in the new world. So, in many ways, what we are going through now is actually a fairly mild version of the catastrophe that Native peoples went through several centuries ago. And so, it's really important to recognize that there's not a single linear history. This goes back to Jen’s point that linear history is very disruptive, both on the economic front, but also the political in the understanding of history itself. That it really is [a] very uneven development for people with different faiths throughout history. And that this is the moment that is really important to learn from Indigenous peoples about how they have survived, they’re assumed to have gone extinct, so many of them have refused to be extinct. How is it that we can refuse to be extinct. This is something

that has been demonstrated by large populations of Indigenous people. I'm thinking now of an interesting news story in the context of COVID[-19] about how the Cherokee Nation is doing much better than the rest of the U.S. There's a website called []. They recently did a story about the Cherokees, how they were testing over and over again for the entire population. It's just a very impressive record that is far superior to the records of the rest of the nation. And there were epidemiologists visiting the Cherokee Nation. So, this is something that is happening right now. In terms of climate change, it's also important to learn from Native practices.

JT: I think in many ways, part of the struggle and the challenge and the feeling of being completely overwhelmed actually especially when I'm in the field is how radically opposed the vast majority of technocrats are to incorporating the nonhuman as a being in the world. And further, to incorporating Indigenous worldviews. It's beyond frustrating, so, I can say, in my previous project, there was absolutely no space for either. Just to share with you, in my current research project, I'm following the development of this next iteration of the U.N. Convention on the Law of the Sea, so, its acronym is the [BBNJ—Biodiversity Beyond National Jurisdiction](#). And there's this ongoing discussion in the negotiations about whether or not to include Indigenous knowledge alongside quote science. The diplomats and the technocrats, the scientists and all those who are participating in these negotiations find extraordinary discomfort. Because Indigenous worldviews don't conform to the neat categories and logics that otherwise define policymaking on the international scale or even the domestic scale for that matter. So, for example, there's an effort quite active amongst the Pacific Island nations in order to include Indigenous knowledge—they don't call it Indigenous—it's traditional knowledge, and it's just very striking to see the way in which decision-makers themselves are deeply struggling with figuring out how to translate traditional knowledge into policy in ways that could be scaled that might be able to actually institute meaningful change, if not on the ecological level, certainly, on the diplomatic level. I was struck by one of the opening chapters of the volume, in which the co-authors [Jason Bell and Frank Pavia] embraces this idea of, so to what extent do we just need to be pessimistic? And I struggle with this in my teaching, I struggle with this in how to communicate to young people the reality of what's going on on the ground without them feeling overwhelmed to the point where they feel paralyzed by the enormity of what's going on. And so, I just suggest then, too, that—I think, in many ways, part of the contribution of the volume is by thinking through, if you think back on [David](#)

[Harvey's timespace-compression](#), it seems to me there's been a lot written. There's the entire field of geography that's thinking about space. But we're not adequately thinking about time. I'm just thankful, again, to have thought through what time means, especially, in a policymaking world where these kinds of categories are just not at the forefront of what the technocrats and diplomats and scientists are thinking.

CF: I think, too, just to jump in off what Jen is saying, we really see these tensions playing out in Latin America today, where a lot of governments are interested and invested in bringing Indigenous cosmologies and knowledge systems into the constitution. And yet, there seems to be sort of this bind, where the only possible model of political development or the national growth, national wealth offered in capitalism is the extractivist model. And so, we can really see this play out temporally where there's this idea that well, we need to extract as much as possible as fast as possible before we run out of these resources at the same time that there is an effort by leftist governments who are promoting those policies to also sort of grapple with Indigenous worldviews. I share that feeling of pessimism, of what is the way out of this bind. And I think that's where I'm really glad that we included so many artists in this volume. And I want to draw or just mention that the concluding artists that we include, the last chapter is by [Beatriz Cortez](#). She's a Salvadoran sculptor who is based in Los Angeles where she migrated during [El Salvador's civil war in the '80s](#). And Cortez has these really fabulous, speculative works; she makes time machines, space capsules that draw from and incorporate Indigenous construction techniques, like using stones or adobe. And I think one of the things that I find most powerful about her work is that she mentions that we often think of Indigenous peoples as being part of our past, essential to the creation of our past and yet, when we speculate into the far-off future, that Indigenous presence, Indigenous knowledges are not as incorporated into this idea of our futures. I find her work really generative in terms of its utopian speculation of these futures that can be shaped and molded through Indigenous knowledges and technologies.

WCD: I really agree with that. I think it's so important to think of Indigenous cultures and Indigenous knowledge not as a relic from the past but as the lifeline to the future. In thinking about ethnic America, it varies quite a bit from one country to another. So, in Brazil, obviously, the Amazon rainforest is under assault. I think it's in Colombia. The Columbia Constitution actually in a landmark decision ruled, just as they previously ruled on [one river as a rights](#)

[bearer](#), the more recent ruling, and [this is a lawsuit brought by young people](#), it's one of the rights for these people, age 16 to 28, that they have a right to the future. And by virtue of the right of these humans, that the Amazon rainforest should also be a rights bearer, that the forest should have rights that the national government should honor and that the government agencies should be charged with protecting the rights of the forest as they would protect the rights of corporations in the U.S. I don't think it's common knowledge in this country that the Columbian Constitution did have this landmark [case]. There's a difference between how technocrats and bureaucrats and scientists think about the ocean, especially in thinking about profitable commodity like tuna and how forests conceptualize—sure, they are very profitable to miners and ranchers—so those are the people who are backing [\[President Jair\] Bolsonaro's](#) reactionary policies. But I think that there are other scientists who are much more on the side of Indigenous knowledge. When the fires were [happening] last year, during the Amazon fires, [Naomi Klein](#) wrote an article that if Indigenous rights would've been honored, there would have been no such fires. So, that got some attention. *Scientific American* did an article saying the same thing; they didn't refer to Naomi Klein, but they did make exactly the same argument that Indigenous people should be the guardians of the forest. What is really interesting is that this year, with the wildfires burning in the American West, there are a significant number of scientists saying that Indigenous fire management practices should be studied because Native peoples actually practice controlled burns. They think that part of the problem is that fires have been seen only as destructive as opposed to ecologically constructive. So, they practice controlled burns that would actually prevent large-scale, uncontrolled ones such as we saw this year. I think that that might be one avenue in which we can highlight the importance. Because it's so clear that non-Native practices are not working. The fires are going to get worse and worse. So, there's something that we're not getting. I think that most people see that Western technology, Western knowledge is not adequate. So, this might be a moment to look at some other practices. I think Indigenous knowledge is a good candidate in this particular context.

CT: If I can just pick up on what Wai Chee was just saying and also what Jen was saying. Wai Chee mentioned a scholar named Kyle Whyte, and what she was saying reminded me of an essay he wrote, the title of which is [Indigenous science \(fiction\) for the Anthropocene](#). And Kyle Whyte places the word “fiction” in parentheses, in order to, I think, highlight the opposition of science with a capital, S, that Jen was talking about with Indigenous epistemologies or

knowledges as if they are a different type of knowledge. And in that essay, he he's very clear about his problem with the term Anthropocene, as Wai Chee was remarking, and I can't quote it verbatim, but it's something like “for some peoples, the end of the world, the Apocalypse, the destruction of one's universe has already happened. And in fact, is continuing to happen.” That, for me, was a really important insight to think about the fact that the past is not past. The past is not dead, a riff on [Faulkner's famous line about the past](#). It made me also think about [Simon Lewis's and Mark Maslin's](#) book, *The Human Planet*, where they actually date the beginning of the Anthropocene to 1610. And sort of get us to think about the Anthropocene not as a phenomenon of some universal human, but sort of really ground these processes that are ongoing in a much more specific historical context. So, 1610 is the year where scientists can see a dip in atmospheric carbon in geological sediments. It's the year of the so-called “[Orbis Spike](#),” which Lewis and Maslin explain is the moment of colonization and slavery, the beginning of those processes, the so-called [Columbian Exchange](#), where things that are being taken and things that are being transferred or given, like smallpox, for instance, leads to the deaths of more than 50 million people in just a very short timeframe, which accounts for this drop in carbon dioxide. And so, thinking about the ways in which the past continues on over these longer arcs, these very long trajectories, really turns modernity and the technocratic time that Jen was talking about, into things that are going to last for much longer than we bargained for.

JT: I wonder, too, to what extent if, at a certain level, I absolutely think it's quite evident that there's a need to not only rediscover for those of us that come from non-Indigenous spaces, and elevate Indigenous knowledge, but I also wonder to what extent, Carolyn, you had all mentioned in the introduction work by [Stengers on slow science](#). I read that text just before I finished the conclusion of my book. It was a provocative read on a couple of levels. And I think in some ways, what I heard her saying is the way in which deconstruction itself is not an endpoint, that we have to push through it in order to deliver another way of inhabiting this world. And what I hear her saying, too, is that it also requires of us in the academy to inhabit a disposition with a sense of humility, where we can be transformed by what we learn, where we can admit that we may not know something, where we can admit that what we think we know might be misguided. I wonder, too, what would happen if we turn the lens also on us as [a] non-Indigenous person to figure out ways operating within the space I know in the academy of how might we resist or at least not institutionally support these

other knowledges that otherwise have been, which Wai Chee rightly said have been proven to be destructive.

WCD: Maybe one way we could try to begin to do that, bolster the knowledge, lack of knowledge, but also to bring other perspectives, especially Indigenous perspectives into what we do. It's just to include a couple of Indigenous texts in the course that is not directly on Indigenous history or culture. I think it's quite helpful to bring in writers who are indebted to Indigenous knowledge. So, an Irish poet who inherited friendship with the Choctaw, or in the case of [Gary Snyder](#), somebody who is deeply mindful of Indigenous history; so, it's just bringing back, reminding us there is a world that is of longer history. I think that it's really important, not to ghetto-ize Indigenous history, but just to make that kind of an integral part of whatever we're doing. I think that might be one way to educate ourselves and educate students, that Indigenous history, cultures, aren't as specialized an area, are really central to our understanding of the world now.

CF: Listening to you both talk about the challenges and the pleasures of pushing ourselves beyond our comfort zones, beyond the languages that we're able to read and speak, to learn from others, really makes me think about the similar challenges and pleasures of interdisciplinary collaboration. And part of our aim with this volume was to bring together artists and humanists and social scientists and those from the quote-unquote hard sciences to think together about these issues. And I'm just curious to hear how interdisciplinarity has informed your work or the challenges that you've found in that space.

JT: I'm trained as an interdisciplinary scholar in both law and media studies. And so, for me, the real challenge has always been about how do we communicate our ideas without getting stuck into the jargon of specific disciplines. So that we're speaking to rather than past one another. I think, in some ways, if we were to elevate this, not just within the humanities and social sciences, but I think in many ways, some of the achievements of the volume is that it's also incorporating oceanography and other forms of earth science. And it makes me think, what happens at the level of combustion, when you have—if I think of our conversation here to bring in an Indigenous worldview—but then, at the same time, what would it mean to take seriously what's coming out of oceanography where we learn that squid, for example, say hello to each other by flashing light, or that we know that fish, like birds, at first light, they sing, they chatter. What would happen if we were able to measure that chatter in a way that might give us a clue

as to actually how many fish there are in a given area. In some ways, it seems to me that some of the challenges is linguistic at the level of communication. But then, some of the challenge for me, in my experiences as a grad student and now at Pratt is how do you organize the university in the 21st century in ways that don't just nod and congratulate interdisciplinarity but actually integrate it into the very structure of the institution. That to me, is a challenge but also a real opening. I think in many ways, that's part of the achievement of the volume.

WCD: I'm working on a project that is dealing with COVID[-19], but it also intersects with—just because everything is happening within this year—the racial justice movement and the wildfires. The chapter I'm working on is called, [*I Can't Breathe, 2020*](#). I think that really is a way to make myself learn a lot about the respiratory system and also about how interesting and complex the symptoms of COVID[-19] [are]. I really am learning a lot of science, I have to learn a lot of science to write about [the system]. And it's fascinating. I also learn a lot about the ways in which to try to understand COVID[-19], it goes back to climate change. This virus is a zoonotic virus, which means it jumps from animals to humans. You have probably heard that it started in bats, that that would be the carrier for the virus to jump to humans, and that wet market in China. Zoonotic diseases developed because so many forests have been destroyed. And when more and more land is used for commercial purposes, different species are crowded together into smaller and smaller strips of land. It's much easier for viruses to jump from one species to another and eventually, to humans. Stopping deforestation is one of the measures that we could take to prevent pandemics. It's a really interesting way in which learning more about the science of the disease has interesting political consequences, the kind of political arguments that I could make. I think in that sense, I don't myself always see science as an adversary; I think there are many instances, especially scientists who understand public health, scientists who work on public health are very aware of the extent to which COVID[-19] symptoms are aggravated by air pollution, for instance. So, in fact, the argument I'm trying to develop, is that, in fact, a good response to COVID[-19] is also a response to climate change. But it's an argument that has to be made through learning more about the sciences behind both.

CT: I really admire Carolyn, Bethany, and Patricia's volume and their effort to create a space for thinking together with a variety of disciplines. There are a number of challenges, and I think one of them at the present time is distinguishing between the collaborative and decolonizing work in a more

common language, which Jen alluded to from current administrative restructurings under the banner of interdisciplinarity. That really endangers less-profitable disciplines. You might even think about a kind of maximum yield approach that's taking place in the universities themselves. But one of the exciting possibilities for the humanities, one of the transformations might be that we take the liberal, humanist ideal of empathy and different perspectives, and not negate it so much as learn to scale it. For me, the scalar empathy would really show the narrowness of current forms of quote-unquote relatability, that much-hated term that reveals the narcissism of what appeals to students and to us. Just for an example, efforts already are underway in literary studies, and other disciplines, it seems to me, to produce geological phenomenologies like what is it to be a stone or planetary process and as corollaries new environmental, and nonhuman dimensions of sociology, or critical explorations of technology studies in biology. In the present, how do we fund and support these efforts and thinkers that appear more clearly in the staff directory of the university in deep time rather than in our current universities?

CF: Well, thank you so much for all of you. It was just a real pleasure to talk to you again today after meeting in 2016 for our conference, and thank you for your wonderful contributions to the volume.

CT: Thank you so much.

JT: Thank you, Carolyn. And thank you to all of you. It was a real pleasure to read each of your contributions

JT: Likewise.

WCD: Thank you.

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