**Genomic Imaginaries: Sparking Dialogue between ELSI and Literary Studies**

**ELSI Friday Forum • February 11, 2022**

**Transcript**

SHEETHAL JOSE

Hello, everyone. Good morning, afternoon, or evening, depending on what part of the world you're Zooming in from today. I'm Sheethal Jose, a Ph.D. student at the Department of Bio‑ethics, and I'm delighted to welcome you all to our February ELSI Friday Forum, Genomic Imaginaries: Sparring Dialogue between ELSI and Literary Studies. This forum is held on the second Friday of every month for one hour at 12:00 noon Eastern Time. We also have a more informal discussion immediately after the panel for 30 minutes in a separate Zoom room. For those of you who might be new to ELSI or CERA, we provide resources to support research on the ethical, legal, and social implications of research in genomics, and connect scientists, policy‑makers, journalists, members of the public, and others to engage. It is funded by the NIH and is managed by teams at Stanford and Columbia Universities in partnership with the Hastings Center and Harvard University. I encourage you to visit ELSI's online hub for recordings of this forum and references. Please use the link in the chat to access our two newest collections. The first is curated by Jay Clayton, and the second is titled Who Are We Now?: Genetics, Genomics, and the Question of the Human, curated by Priscilla Wald. These consider how stories we create about social classification and our own identities have been changed by genetic information. Please also go to the website to join the ELSI Scholar Directory, sign up for newsletters and other events like this one at ELSIhub.org, and you can also get daily updates and news on our Twitter.

Okay. So now just for some quick housekeeping. If you wish to use closed captioning, please turn on the CC button at the bottom of your screen. The panelists' presentations will be very brief in order to conserve a significant portion of our time for discussion, so please use your Q&A button, which you will find at the bottom of your screen, to write in questions for the panelists at any point during the session, and we'll try to get to as many of your questions as possible. You can also register your enthusiasm for a question and elevate it up the list by using the upvote button in the Q&A box. The chat box is available for further engagement, and we will post links to references, resources, and discussion as well. But please use the Q&A box for panelist questions. And if you have any other questions at any time, please e‑mail info@ELSIhub.org.

Okay! So now it is my absolute pleasure to introduce our moderator for today's discussion, Dr. Rebecca Wilbanks, who received her Ph.D. in Stanford's program in modern thought and literature and was a fellow at Johns Hopkins before joining its writing program in 2019. She explores the intersection of science and culture with a particular interest in the life sciences and exchanges between science and literature. Her recent publications examine the history of genetic insect control, the relationship between science fiction and futurism, and the creation of value in do it yourself biology practices. It is again my pleasure to now turn it over to Dr. Wilbanks, who will introduce the topic of our discussion today as well as our speakers.

REBECCA WILBANKS: Thank you so much for the introduction, Sheethal. I'm delighted to be part of today's conversation.

In sociology, an imaginary is the set of values, laws, and symbols by which people imagine a social whole and their relationship to it. An entity as vast, diffuse, and abstract as society, or the imagined community of a nation exists because of the stories, and the connected laws, practices, and infrastructure, that call it into being and make it available for thought. The same could be said for the genome. Some things are so big or small or complex that they can only be imagined. What kind of entity is the genome, and how do people imagine their relationship to it? These are the kinds of questions that we mean to invoke with the title Genomic Imaginaries. So I'm very excited to learn from our two panelists today, both scholars of literature who specialize in the stories that are told about genomics across a variety of genres. Both of whose work I have followed with great interest over the years. Right now I'll introduce each of the panelists, and then they'll present consecutively.

Our first panelist, Lesley Larkin, is a professor of English and the English MA program director at Northern Michigan University, where she teaches courses in American literature, critical theory, and composition. She is the author of Race and the Literary Encounter: Black Literature from James Weldon Johnson to Percival Everett, and the editor of the forthcoming Encyclopedia on Contemporary American Fiction. She focuses on two avenues: speculative texts and ethnocentric practices, and genomics and the literary enterprise. Her monograph in progress, Reading in the Postgenomic Age, is under contract with the press. I've had the privilege to hear her present on aspects of this project before, and I'm so looking forward to reading the book when it comes out.

Our second panelist, Lara Choksey, is a lecturer in colonial and postcolonial literatures in the Department of English at University College London, and she specializes in meetings of literature, science, and technology and political philosophy. She's the author of Narrative in the Age of the Genome, which just came out last year and had a lovely review in the journal Science, and she has also had articles and chapters published in Medical Humanities, Journal of Historical Geography, Journal of Literature and Science, the Palgrave Handbook of 21st Century Literature and science, among many others.

So please welcome both of our panelists, and I will pass it off to Lesley!

LESLEY LARKIN: Thank you so much, Rebecca, for that absolutely lovely introduction. I'm just so delighted to be here alongside you and Lara. I admire both of your work so much. And thank you for the invitation, and everyone putting the event together, and everybody else who's part of ELSIhub. I'm thrilled to be here. I don't get to take part in interdisciplinary discussions all that often, so it's absolutely a delight.

Okay, I'll dive right in. We can go to the first slide. So as Rebecca was saying, my current project is a monograph in progress called Reading in the Postgenomic Age. Although I address some works that precede it, the complications and the advances of the post‑genomic age are the lens through which I approach this archive. Next slide.

A definition of the post‑genomic age is a bit hard to pin down, and perhaps we shouldn't necessarily try. But generally speaking, I approach the post‑genomic way as the period of the first full sequencing of the human genome that's characterized by rapid development of technologies for genome sequencing, the commodification of such technologies for patients and genealogy enthusiasts, a redoubling of public interest in genomics, and a progressively complicated scientific understanding of how genomics work, often in tension with the continuing popular understanding of genes as singularly determinant. Many literary texts can be analyzed through a post‑genomic lens, but for my purposes I'm most interested in those that focus on genomics and its ethical implications. Next slide.

There are several through lines that cut across this relatively eclectic archive. Resistance to gene fetishism and textual fetishism, for example. Re‑articulations of race and gender in genomic terms. Technical metaphors as they cut across genomic and literary discourse. Next slide.

But at the heart of my project is something I learned from exploring this archive itself, which is that the ethical questions raised by genomics are, for many authors, the opportunity to engage in parallel ethical questions that straddle genomics and literature. These are works that investigate the ethical implications of tissue sampling, genetic testing, transgenic modifications, and the commodifications of genes and genetic technologies; also draw attention to power and privilege in the field of literature itself. Next slide.

So, everybody in this virtual room is familiar, I think, with the idea that the humanities encourage an ethical sensibility that is needed in STEM enterprises, even if literary study has yet to take a central role in conversations about genomics. And the advent of ELSI and the rise of interdisciplinary approaches to genomics have clearly led to so many salutary developments. But I would also identify three risks as we pursue further interdisciplinary exchange, especially at a moment when the arts and humanities face significant evaluation, in academia and in the culture more broadly. And these risks are reducing the arts and humanities to their practical or scientific or commercial value; presenting the arts and humanities as naturally ethical or humanizing; and suggesting that relations between the arts and humanities and the sciences are unidirectional. That the humanities might have something to offer the sciences, but that the reverse exchange is rarely considered. And I would suggest that we should take care not to pursue instrumentalizing and unidirectional applications of the humanities to science, as such approaches would risk reinforcing the sciences/humanities binary and mischaracterizing both fields. What philosopher Martha Nussbaum calls the ‘spirit of the humanities’ - these are her words: search critical thought, daring imagination, empathetic understanding of human experience, and understanding the complexity of the world we live in, that spirit of the humanities characterizes scientific inquiry at their best. Similarly, science and the humanities can serve inhumane ends. This is why novelist and scholar Viet Thanh Nguyen prefers the term "inhumanities" to "humanities," as he draws attention to how systems of representation can both abet and upend , colonial, racist, heterosexist, and other oppressive systems. Next slide.

So the work in my archive that addresses interdisciplinarity most directly and complexly is Margaret Atwood's popular MaddAddam series. In this work Atwood imagines a post‑anthropocentric world, in which the extinction of humans and the humanities goes hand in hand. Given the role transgenic science plays in both of these catastrophes, we would be forgiven for thinking that this series is a lament for the humanities and a denunciation of genetic engineering, but it's really neither. Rather than reinforcing the naïve view that the arts and humanities train us to be more human, or that techno-science is naturally inhumane, the MaddAddam series draws our attention to structures of exploitations of both fields. It hinges on a very familiar trope: genetic engineering has run amok. However, more terrifying than transgenic experiments themselves are the actions of the companies that undertake them, including a business model that involves selling pharmaceutical products that both cause and cure disease. Eventually, a mad scientist called Crake exploits existing pharmaceutical vectors to cause a global pandemic, wiping out the vast majority of humans. He has also created a species to take the place of humans that, notably, has been designed to lack literacy and artistic expression. Although Crake hammers the final nail in the coffin, Atwood makes clear that the humanities are already on the decline in the pre‑apocalyptic world, where corporations have supplanted democratic institutions and the humanities are radically diminished. The protagonist is made to feel inferior for being a word person rather than a numbers person ‑‑ Atwood's language. He grows up in a biotech compound surrounded by STEM geniuses, chief among them Crake, who carries on a dialogue about the value of arts. Jimmy attends an underfunded arts school that emphasizes employability. The career culminates in the crowning achievement of Crake, a drug that brings about the end of the world.

Perhaps we aren't surprised. He's a mad scientist, after all. He's supposed to lack human feeling. But Jimmy's been trained in the humanities, and we don't even have the concept of a mad humanist ‑‑ yet perhaps we should. Yet Jimmy continually is read as a failed reader. He doesn't understand people's stories. He exhibits major lack in empathy. And yet he's positioned as defender of the humanities, both before and after the pandemic. Jimmy is unable to recognize the inhuman in the human and the human in the inhuman. These failures, of course, are not Jimmy's alone; they are structured in systems. Jimmy's training, Atwood makes clear, has been corrupted not because of the ascendance of science, but because of a system in which both the science and the humanities are subject ultimately to the profit motive. Next slide.

Despite the dismal outlook for the humanities suggested by Atwood's story, Atwood reserves space for narrative resistance. The sole word person in Crake's research lab, Jimmy poises pointed ethical questions. What if they get out? he asks about wolf‑dog hybrids. What if the fewer people are very greedy and wasteful? about population control. Where do you get the subjects? for clinical trials. And how much is too much? How far is too far? Although his questions don't go far in the lab, by the third book in the series Atwood offers us a glimpse of effective interdisciplinary and interspecies collaboration. This last book follows a motley group of survivors, both word people and scientists, as well as transgenic species, who have to work together to solve difficult problems in a complex ethical context. In other words, Maddaddam, to borrow Nguyen's phrasing, asks: What is to be done in the present, with actual others where the struggle over ethics and justice is often tied to people's deeply rooted sense of past recriminations, where any ethical achievement will be inevitably compromised, where any act of justice has a limit? And this undertaking is crucial to the world Atwood would imagine, as they are in our own. Next slide.

According to literary scholars ‑‑ I especially like Moya's formulation that thinking through literature is one of the best ways to confront social issues because literature allows writer and reader alike to explore them in all their particularity and embeddedness in the social world. If literary has something to offer the sciences, it's not the injection of the humane, but the opportunity to use story to think through what affects all of us and the world we share. Thank you.

And I will hand it over to Lara!

LARA CHOKSEY: Thank you so much, Lesley, for that brilliant talk. I, I thought maybe we could just read the end of Oryx and Crake and just sort of... have a reading group. Because it summarizes so many of the things you've just said and things we've already talked about as a group.

So thank you again to Rebecca, and to Lesley for a fantastic talk. And a huge thank you for inviting me to speak at the ELSI Friday Forum, and to everyone who's been involved in organizing this event today.

Just wanted to give a few introductory remarks. As we've entered the post‑genomic era, so many questions have emerged about the place of genomics in society. The way that the public, or publics plural, are involved in deciding on its powers ‑‑ but also its limitations! And like Lesley, I come at these questions from the perspective of narrative. Which is to say that first I think about the way that the genome is and has been constructed as a biological object, as a thing that can be distinguished from other biological things, that is its own thing, that does its own thing... and then how this construction of a genome became attached to one of the principal subjects of the Enlightenment: that is, how it became attached to what one philosopher has called a bio‑centric account of a human. And she doesn't mean that in the ethical sense of all life having equal moral standing. She means that after Darwin, humans were understood primarily as biological beings. That is, we're reducible to our evolutionary or biological histories. And she's interested in an ecological account or mode of being human. For me, what's interesting is HOW we move from this bio‑centric account of being human to a ‑‑ a human that is rooted in praxis and storytelling. And this means thinking about how we decide to narrate ourselves. And in my work I've done this through the post‑genomics question, precisely because it's thrown so many ideas of what makes us human into disarray. So that's what I'm rooting for in my work. Next slide, please. Thank you.

So one way I've found into this is by thinking about decision‑making, practices for decision‑making. The Human Genome Project positioned the strange bio object, the genome, in a network of sometimes contradictory interests. Most famously, reading the genome was going to transform the horizons of human health. And we see how it's made the field ‑‑ medicine possible. So it articulated a set of priorities about what it considered to be important for "the future." But whose future was it interested in? This is a question asked in the first ELSI Friday Forum: If human genomics hasn't yet moved beyond population descriptors such as race, what does that mean for the way it's understood when designing studies?

So I come from a slightly different angle. And I find it helpful to think about the kinds of stories genomics and genetics have appeared in. Most obviously science fiction, usually with some dystopian edge. But also in the ways families are imagined to belong together! Why men start wars. Why particular life events in the course of development can be predicted along from utero to old age. And I've included blockbuster here, because often genomics is used to heighten the scale. From a lone genius in a field to the spread of a virus. But the ways of incorporating the genome into storytelling usually encounter two very difficult questions: What IS humanity after the genome? And I mean by that after the possibility of the genome, the possibility of reading the genome. If we're constantly crisscrossing and intersecting with other life forms, what do we do with a world so bent on distinguishing between humanity and everything else? And the second question is how does narrative allow movement between different constructions of time and heredity? Genetic narratives often have to do with multiple forms of time that intersect at a given moment ‑‑ evolutionary history, cultural history, genetic inheritance, epigenetic transformations ‑‑ that is, changes in the genome over the course of an individual's lifespan.

So we're talking about messy stories, in the sense that they tangle us up in knots in our own conceptions of the way that time and space work, what it is to exist in a three‑dimensional world. And is it ever possible to know exactly how time and space produce effects on health or development? I'm not sure! So the question turns to what we think is relevant, and to whom. Can I have the next slide, please?

So ‑‑ thank you. So the flipside of this: It's where science provides a narrative. Science depends, very often, on imagined constructions of the world to make itself understood. That is, it relies upon the speculative. And here's a still from Gattaca, a film many of you doubtless know. And this film was its own kind of cultural event at the heights of 90s genome fever. And it offered some updated ethical stakes for genomics social uses. I've also got my grandfather's copy on my desk, actually. Unlike chemistry or physics, biology has always depended on metaphor to convey its theories. We see this in how gene mapping the chromosomes is often compared to mapping the night sky, the dark spaces between the stars like non‑coding DNA, which has become so key to understanding what it is that makes us human that it is to understanding the expression of genetic material. But this is an extraordinary thing, to call that interconnected chemical compound of DNA a map. To liken it to charts of land, sky, and sea, a space whose resources might be discovered and made valuable. So this conceit of discovery has become central to the way certain kinds of features feel relevant and feel possible. Can I have the next slide, please. Thank you.

And in the rush to make sense of code, I think we forget sometimes that our interests ‑‑ us, as in the public ‑‑ also shape research agendas and policy decisions, which is a point made by the bio‑ethicist Charo. Public interest is relied upon both to slow down science ‑‑ a should we, instead of a could we ‑‑ but also to justify! Lifespans ‑‑ and I think this is where some of the really huge difficulties of talking about the ethics of genomics become visible, in that contrast.

So what, what IS the social responsibility of those of us who analyze literary and cultural narratives, given their powerful role in helping to set the parameters of genomic science? My sense is that relying on narrative to do the right thing is a risky business. Stories slip away from us. Like the T‑Rex escaping her enclosure, narrative will do its own thing, regardless of legal or scientific constraints. I'm not going to push that metaphor much further; I will leave that for you. Can I have the next slide, please. Thank you.

But I think what paying attention to narrative CAN do is help us find our bearings in the version of humanity that has emerged after the genome. And this doesn't just mean the way that science tells us we need to rethink heredity and influence, but also respond to the emergency we're in the midst of. We've come up against human systems that have not been designed around complexity of the post‑genomic. Strange alliances between species, the irreparable impacts of big industry on climate and environment. And one of the biggest questions, I think, of the post‑genomic is about precisely what is understood by "environmental influence." So the post‑genomic forces us to rethink the environment, not as an "out there" to be mentioned and made valuable, but as something which is made relevant.

And I think that's come ‑‑ I've come to understand narrative in that way, as well. Narrative is, in a sense, a process of making things relevant. So I'll just leave it there. If I can have the last slide, because there's a statue of Henrietta Lacks I wanted to end with at the University of Bristol. So thank you very much.

REBECCA WILBANKS: Great. Thank you both so much for those wonderful talks, for opening the conversation. And to start, I... I have a few questions that I'll pose before we open it up to the audience. And one of the things that I was really struck by in both of your talks is the way that you both caution against framing literature or the humanities as society's moral compass. I really ‑‑ Lara, I loved your metaphor of literature as the T‑Rex that escapes the enclosure. To, to say that narrative will do its own thing? Painting it as a, as a force for sort of injecting the unexpected, or... a sort of what people have called "the swerve," instead of raining us in.

And so I wanted to ask both the panelists to start, if you could give an example where a piece of literature surprised you or surpassed or challenged your expectations for genomic narratives.

LESLEY LARKIN: Oh, go ahead! Go ahead, Lara.

LARA CHOKSEY: Oh, okay! Um... yeah, I think that's such a great question. And I think the thing is that scientist is... is, what we so call this, um... the block of knowledge... it's always mediated by so many different interests! So the example that I was thinking about when it comes to the element of surprise, I was thinking about a moment where I've been surprised in these contexts... so, often in science fiction, the reader is always expected to suspend disbelief. And I think that, to a certain extent, the same thing is true when we're thinking about the possibilities of genomics and sort of the future horizons of genomics. So I was thinking about a moment in ‑‑ which is something I talk about in my book. And this is a series of monologues that offer testimony on the Chernobyl explosion. And a mother is describing her daughter being born with genetic defects as a result of radiation contamination. And I just wanted to read out a little bit from this. So the daughter's being classed by doctors as disabled from childhood. And her mother says, so what do they mean? What does this mean, disabled from childhood? She's disabled from Chernobyl. I've studied my family tree; there hasn't been a case like this. They all lived to 80 and 90, my grandfather to 94. They called me crazy and laughed at me. They said children were born like that in ancient Greece, China. One yelled at me.

And I remember the shock of reading this passage. And aside from the obvious cruelty going on here, I think the shock comes from the way time is being instrumentalized here. So there's the development of childhood, the genealogical time of family history, time that draws continuity between ancient worlds, and the time of Chernobyl. And it's a shock generated also from the illegibility of the daughter's body. She can't be read. She can't be read in the official sense because that would mean to admit responsibility, and she can't be read in terms of family history. And then there's this attempt to place her somewhere very far back in time, and this also fails.

So I think this is also a kind of example of what some of us call engaged research, in a sense, this Chernobyl story. Research that seeks to understand the relevance of bio‑medicine to its stakeholders. But at the same time, these monologues perform this gesture of constantly opening out the reader into this kind of vertigo experience of time when it comes to how, how we know the body. Knowing why bodies do what they do, and being able to sort of set borders and parameters around what influences and what isn't. So that was what came to mind when I was thinking about that element of surprise.

LESLEY LARKIN: That was super interesting. I, I think this is a really interesting question ‑‑ you know. This isn't exactly the right answer to your question, but the first thing I WANT to say is that the Maddaddam trilogy is all about narratives doing what you don't expect them to do. That's a big part of Jimmy's problem, that he keeps expecting certain kinds of stories from people he interacts with, and when they don't conform to his expectations he doesn't quite know what to do about it. So the theory itself is kind of a parable for the way readers come to texts with expectations, and then those are up‑ended. And I suppose my experience with Maddaddam is a bit like that, too, because I didn't go into reading that series expecting it would be as critical towards the arts and humanities as it is! Or, critical isn't quite the right word, because the real target of Atwood's critique is global capitalism. But she's quite willing to lay bare the legacies of colonialism and racism and exploitation that are part of the arts and humanities. And that took ME a bit by surprise, because I was expecting something closer to straightforward... you know, critique of technoscience and, and as I said in the talk, lament for the humanities. And that's not what we get there.

The other text that came to mind in response to your question, Rebecca, is one that I know Lara has written about, too, so insightfully, The Immortal Life of Henrietta Lacks, that you showed an image of at the end. And that surprised me because it sets out to address a kind of, a history of exploitation, and in the process of doing it that its own narrative operations repeat that history of exploitation. But then there's also this sort of counter‑narrative embedded in the text that resists what the author is attempting to do to control the waywardness of stories about bodies! And, um... and so I guess that's a text that surprised me in that way, too. That even a text that is attempting to fix, in some way, a biological or genetic narrative, can't quite do it. And that there's this counter‑narrative embedded within it that is resisting its own story. And that ‑‑ you know, in that text, it's ‑‑ particularly I would associate it with Henrietta's daughter, Deborah, who speaks back over and over again against the kind of narrative control that the author of the text is, is imposing.

And I guess what I would ‑‑ you know, all of these together, these examples together say something to me about the importance of reading! Right? Whatever a text, whatever potential it has to interrupt the reproduction of standard ways of thinking about the genome... that happens through reading, through the agency of readers. So that question that Lara asked, "what is our responsibility as literary scholars in this realm?" Part of it ‑‑ ALL of it is about the decisions we make as readers. What we choose to pay attention to, what we bring to the text, our ability to recognize the context in which we read, who's present in a scene of reading and who's not. You know, all of that, all of those decisions are made by readers. And so all of the potential for surprise, I guess, and waywardness, and also the potential for, you know, reproduction of the same, resides in us.

LARA CHOKSEY: Can I just respond? Can I respond to...? Also hi, Jay! Clayton. Good to see you. Just saw your name come up.

Yeah, I wanted to go back to what you were saying about empathy, which is so interesting, Lesley. Because I'm teaching first‑years at the moment. And so often, the way we narrate ourselves wanting to be scholars of literature, wanting to study literature, is that there's that moment that you feel that it does kinda teach... it teaches people to be more empathic. And I thought what you said about Oryx and Crake was so brilliant in that sense. Lapses of empathy. I've written that down. And failure to be a reader. There are plenty of terrible readers in humanities. But we...! (laughing) We talked, in discussion, with... with first‑years ‑‑ we were thinking about being affected as, as an alternative, perhaps, to empathy. And I think that question of attention is really interesting, in that sense. Attending to something. Being ‑‑ expecting to be, or even preparing to be, affected by something. And I think there's a sort of... I mean, this is a bit of a stereotype of science, science and humanities, culture clash. But. There's a, there's a... I think a lot of these texts sort of demonstrate the attempt to keep... affect, or being affected, at a distance. And the code that empiricism will be able to sort of... hold the line. I mean, I think Jeff VanderMeer's Annihilation, Southern Reach trilogy is so brilliant in the way that it plays around with that. So yeah, I thought that question of empathy and being affected and attention... as a mode of relation, was really interesting, how that relates to this conversation.

LESLEY LARKIN: Thanks for that, Lara. And I'm just super interested in that formulation of attentiveness. What are we choosing to pay attention to? And also, preparing yourself as a reader for the affective responses that you might have, and making those too an object of critical attention.

LARA CHOKSEY: Mm‑hmm.

LESLEY LARKIN: That's wonderful. Yeah.

REBECCA WILBANKS: Yeah. Thanks for both of these answers. I think the, the Henrietta Lacks example is such a great illustration of what you were talking about, Lesley, of the parallel ethical issues that are faced... in the humanities and the sciences, in terms of the ethics of reading both texts and genomes.

I wanted to ‑‑ so, sort of continuing on the, on the topic of ‑‑ well, if we're ‑‑ we don't want to look to literature for sort of a simple moralizing function. What, what CAN it do for us? And Lesley, you sort of hone in on literature as a aid to problem‑solving in a complex social ‑‑ socially complex situations. And Lara, at the end, similarly sort of talks about... the, the wicked problems that we're facing. And how... narrative can help make certain things relevant. Maybe things that we weren't expecting, or we don't start out thinking are relevant. And so, I was wondering if you could reflect on whether those things are connected. Is part of narrative's problem‑solving ability the way that it helps to make particular things relevant?

And if you like, Lesley, just to give ‑‑ to bring it back to Oryx and Crake, I was thinking about the end of the book again and how Crake tries to design his ‑‑ the Crakers, the people, the genetically‑engineered people, without... without an artistic sensibility. But in the end in the book, they sort of end up re‑inventing myth and narrative and storytelling. And so, I was wondering how you read that part of the book, and whether that's... could be related to this problem‑solving function of literature.

LESLEY LARKIN: Yeah. So, right, for anybody who hasn't read the series, by the end of the third book this new species is learning to read, has ‑‑ you know, one of the human characters who has been keeping records and writing down stories gives over that book to one of the new species for him to take it over. So there's this sort of passing of the, of the torch. And, um... yeah! In that ‑‑ in her version of this interspecies, interdisciplinary comm‑ ‑‑ plural communities. You know, oral and written storytelling become a big part of how the characters understand each other's differing, you know, position in the postapocalyptic world. And they ‑‑ it's through those new understandings that they can come to ethical decision‑making. So they ‑‑ the humans, for example, decide to stop eating the transgenic pigs. And they also start using a new respectful term to refer to them that the pigs have chosen for themselves, and. This motley group has to decide whether they want to pursue the death penalty for a group of violent humans that have also survived the apocalypse and have, ah... and have been doing terrible things to their community. So all of these difficult questions they've gotta navigate. And their ability to do that rests at least in part on this sharing of stories that happens between them. And it's not utopian; you see them in all kinds of conflict with each other. And... the character who hands over literacy to the new species also really worries about that! She thinks, now that I've given them literacy, are they going to reproduce everything wrong that humans did? Are they going to remember how to read but not how to interpret? Are they gonna receive texts as, you know, scripture and not be able to put them in context? So, you know, present ‑‑ so it's not as if Atwood is saying, you know, storytelling and narrative solve all of our problems! But, when we can keep the practices of storytelling alive and in context... and you know, when we can use it as an intersubjective tool for understanding one another, it absolutely can be a way to navigate complicated ethical issues. So, this phrasing ‑‑ I wrote that down, Lara, when you said "literature is a process of making relevant." That seems very related, I think, to the way that I'm understanding Atwood's representation of narrative. It has to be relevant; it can't be extracted from context. It has to be... engaged in, you know, a very community‑oriented, interactive way. I think that was a little bit roaming, but what do you think, Lara?

LARA CHOKSEY: Yeah, it's really interesting what ‑‑ again, just the conversation that we had earlier in the day when we were talking about A Map of No Return, which is connected to some of these conversations, I think, in really interesting ways. And we were talking about collective fabulation. And someone raised the point ‑‑ so I can't take credit for it: Sometimes we need to remember what happened so that other people can, other people's accounts of what happened can be validated. Can be, can hold. Can stand. And that doesn't necessarily ‑‑ again, to come back to that legal scientific constraint question ‑‑ that doesn't necessarily have to be attached to theories of formalized practices, in a ‑‑ you know, when Rebecca was talking at the beginning about the word genome, and about the word ‑‑ you know, which is such a huge word, and then the social, which is another huge word. I think... the question of relevance for me brings in this, brings in the dimension of the pragmatic. Of what is, what is possible in a given situation. And there may be lots of, um, sort of legal machinery to, um... to ‑‑ that's supposed to facilitate certain things. But what happens when that breaks down? And that's one of the big questions, not only of that trilogy, but also dystopia more broadly. That genre is always asking, okay, that's great that that was in place, that you had this code and there was this constitution, but codes break down. Constitutions break down. Shocks happen.

So I suppose that would be one way into it. But I was also ‑‑ I was gonna say this in response to another question, but I think it might be more helpful here. I mean, again, I'm... from what I've written about, when Yaa Gyasi writes about a speculative genealogical tree in Homegoing, this fictional genealogical tree that no one in the novel is ever going to see themselves, this produces I think a really heightened sense of dramatical irony. And again, this is about reading. Because the reader becomes a kind of archivist and custodian of history. But again, the vertigo is there, because this is a history that is not accessible to the protagonists of the book. And I think again this is a way of questioning the relevance of scale, the relevance of... um, not to say that evolutionary history isn't relevant. But it's a question of where ‑‑ who, who can view it, who can access it. And again, the ways that it... they ask us, these narratives can ask us to read history differently, and to think about the illegibility of history in a really different, different way ‑‑ and to take that serious. To take it absolutely seriously.

REBECCA WILBANKS: Thank you. So, there are some really great questions in the chat. So let's try to bring some of those in. Jay Clayton is asking about something which I also wanted to talk about ‑‑ which we're starting to get into already. So I think this is a good one to go to next. And he says that he's bringing us back to Lesley's point again about the parallelism in the ethical issues between the humanities and the sciences. And so, he says: Could you say more about how you see these parallels working in bio‑ethics research? Or maybe another way of saying it is, what are some implications that this might have for interdisciplinary work? And Mildred was adding onto that as well, and said: Maybe to give us a suggestion, again, of one way that it might work, she said, I love what Lara said about narrative making things relevant and wonder if narrative helps provide different stories and voices about what is, which in turn could result in different conclusions about what ought.

LESLEY LARKIN: Right, these are the hardest kinds of questions. Right? How to move from the sort of theorizing that literature makes possible into practice. You know, I will admit that the beginnings of this aspect of the project for me were really focused on literary criticism itself. You know, I was kind of interested in these defenses that the humanities and literary criticism feel like they have to make in a moment when we face low funding, and low enrollment, and. You know, how do WE stay relevant in a moment that seems, at least in the academy, totally dominated by STEM research. And some of those defenses have to do with saying, well, we can attach ourselves to other fields. We can, we can show that we have something to offer. And, um... as, you know, hopeful as that position is, it also has given me pause, because I'm not sure that that kind of defense actually preserves the possibilities that reside in what we do in literary studies. If we present ourselves as a kind of supplement to, or... ah, attachment to other fields, then what are we doing anymore? And so I was interested in thinking about how these conversations could reshape how we understand what we do in literary studies! Rather than, you know, what do they help us to offer other fields. But in the course of doing that, I think I've also come to understand that, you know, the particular pressures that we feel in the humanities right now are just the flipside of what so many people feel in, um, in technoscience and in the life sciences. You know, the lack of funding for humanities is the other side of the, you know, constant need to pursue funding on the side of the sciences, whether that is public or private. And you know, I think this is part of what Atwood's theory opens up so beautifully: These are two sides of the same coin. That's a sort of broad answer. How do we translate this to, you know, actual practice ‑‑ interdisciplinary practices? I think that's really, really, um... hard, but really important? I, um... I really like this notion that comes out of the health humanities, that Dasgupta has articulated narrative humility? You know, we hear a lot about narrative competence, particularly in relation to questions of diversity and inclusion. And she has offered narrative humility has something of a corrective to that ‑‑ or, maybe not a corrective, but an additional concept that might help us think about how we come to interdisciplinary conversation as well. I think these kinds of interdisciplinary ‑‑ this sort of interdisciplinary work has to be governed by narrative humility, and has to be open‑ended. That we can't have in mind a particular kind of endpoint. And that's quite difficult because, you know, we need the structures, the institutional space, the funding to pursue projects without necessarily a specific endpoint in mind. But I guess those are the... sort of ethical positions that I would bring to it, open‑endedness and disciplinary humility, if I can paraphrase that term in that way. What do you think, Lara?

LARA CHOKSEY: Yeah, um. To ‑‑ yeah, to start where you ended: That... this ‑‑ I think ‑‑ humility is, is a good one. And also, um... I think placing a question mark over research as means to an end. And questioning that end. What is the end? What is the, what's the desired outcome? What is it that it's being worked towards? So I suppose I was thinking about the difference between philosophy and bio‑ethics, as far as I understand it. And philosophy, I think, would ask what is good. How can we live in a good way? Big questions, big traditional questions of philosophy. But also learning how to die! I think, is one of the really big questions of philosophy. Whereas bio‑ethics, I think, is... not to reduce it, but I think it's trying to ensure that the best possible outcome for as many people as possible. And those ‑‑ and how those, how are those different ways of framing the good... complementing each other, but also somewhat contradicting each other? And how can narrative and literature more broadly help us think that through, think that difference through? What the best possible outcome might be; its relevance to... not necessarily the largest number of people, but particular communities. So that made me think about, again, about engaged research, which is a big topic certainly in the UK health humanities scene. And I actually did my postdoc at a center that is very strong on engaged research. And by "engaged research," that just means going and talking to people about what is relevant to them, in their particular health context, their particular situation. And that is incredibly difficult research to do. Because! What you need to do is dissect, in lots of ways, how your big research question can become a kind of collective space that is still gonna be pretty much termed by you and your interests, and whatever you get in that space from those people will then become data that you can then sort of funnel back into the particular research question that you were trying to answer. And the space for the unexpected is very, very constricted, I think, in that model. So I think that's a big question that we have to look at. What models do we have of... participation, I suppose? And how can those models be, I suppose, energized, but also... um... in a sense, be thinking not in terms of a means to an end. Not in terms of what you want to get out of a situation and the kinds of data that you want to produce. But how can that situation be turned around to hear what IS helpful or what IS relevant to the given community that... that you've identified! As well. And this is something that The Post‑genomic Condition gets at really well, which says, you know, genomics just isn't relevant to a lot of people. Or the way it is is through ancestry testing, rather than precision health care. Because precision health care is just this far off, again, kind of night sky, for most people in the world. So, yeah. That would be a way of beginning to answer that really big question.

REBECCA WILBANKS: Thank you for, so much for taking a stab at that one. (chuckles) There's a couple other great questions in the chat. I think I'll read them both, and then we only have a few minutes, so maybe you can just pick up on whichever one speaks to you, and then I hope that some of our audience members will join us for the "after‑party," so to speak, so we can continue the discussion.

So Derek So asked, do you see a tension between the idea of literature as adding particularity and embeddedness, as in the quote from Moya, and the sense of abstraction or metaphoricalness that often comes from far‑future and dystopian fiction like Brave New World? And then, to throw in one more... oh. It disappeared from the chat. Um.

SHEETHAL JOSE: It's on the Q&A. It's in the Q&A box. I can read it out, if you prefer?

REBECCA WILBANKS: Yeah, read out Charon's question. Sheethal?

SHEETHAL JOSE: Yeah! She says, reading Joy Williams' Harrow and Lorie Graham's poetry in Runaway recently leave me altogether and only with despair. Indeed, the new formalisms in literary criticism today ‑‑ Caroline Levine, Alan Palmer, et cetera ‑‑ point toward the social powers of close reading. Do our hard‑won skills in reading help in pushing back against despair?

LESLEY LARKIN: ...those are both really great questions. I'll say something quickly about the question about metaphor and embeddedness and particularity. I'm really interested in the moving back and forth between what feels embedded or material or particular, and what feels metaphorical or abstract. And I think science fiction in particular is so much about that. Is about making material what might otherwise be just metaphorical or abstract. It's something Samuel Delaney has written about, for example. So for me, a lot of those texts are devoted to helping readers to feel as material and immediate something that might otherwise just be... speculation in the most abstract sense. So, some of ‑‑ one of the ideas that I'm working with in my project is the notion of the usable future. We have this idea of the usable past, particularly in discussions of Afrofuturism, for example. The way that histories and traditions of the oppressed are brought into the present as a way of navigating and charting futures. I think there's also in some futuristic work what we might call a usable future: these future representations that, of course, as so much science fiction does, are really focused on the present. They often are very near‑future worlds. This is true of Atwood, but also Alina Trejano, who's somebody else I'm writing about. And these near‑future speculations that almost ‑‑ that critique and, in Trejano's case, lampoon, privileged readers who imagine the horrors of, let's say, transgenic abominations or violations of privacy or state violence enacted through genomic technologies ‑‑ imagine those as things that could ONLY exist in the far future. When, in fact, they are just... slightly novel versions of things that happen to people all the time in the present. And so there's a way that some of these futuristic speculations are really training readers to read more critically the present moment, rather than be lost in some far‑future speculative abstraction. That's my thought on the first question.

REBECCA WILBANKS: Thank you.

LARA CHOKSEY: Yeah, two great questions. I'll come in on the second question about the social powers of close reading. I mean, I just ‑‑ I mean, a part of me just wants to give a one‑word answer, which is "yes"! But I want to say HOW. Because... I think... I suppose the last two years have been, we've ‑‑ (sighs) Coming back to this question of attention. I think... it feels to me, at least, that we're living in this kind of space, this digital space, of hyper‑attention. And that "we" is obviously a very constricted section, the "we" that I'm using there. A "we" that connects in this way, that can be on the Zoom recording, and all of the things that go into that. But I think this question, I think ‑‑ I suppose I'm interested in... not necessarily close reading as a description of method that is somehow kind of singular to the humanities, but actually ‑‑ to go back I think to something that Lesley mentioned ‑‑ that there are all kinds of close reading that we're participating in, whether we are students and scholars of literature or not. I think it's a kind ‑‑ it's kind of a case of recognizing attention, and recognizing where we are as readers and what we do pay attention to. And I think that is something that literary people DO think about a lot. We think about trajectories of attention. And it does ‑‑ again, it puts that question mark in front of the, over the means to an end. Because it's, it's about sort of learning how to track the multiple interests that might be involved at any one point in a particular kind of, in a particular kind of... attention network, if you like. And I think we're all doing that all the time, in lots of ways. So becoming, becoming more aware of how we're doing that, and why that matters for these conversations. So, to sort of bring that down to a... from a less abstract, in a less abstract sense, I think I come back to that great question asked in the first forum: Why is race still important? Why is this ‑‑ why is it gonna take another ten years for race to disappear from population studies? Why ‑‑ or precision, or to be used as a placeholder? I mean, that's a very sort of real, practical example of where attention ‑‑ where there's kinda hyper‑attention! Of a historical description, that doesn't, as far as we know, have any biological relevance. But is still very much active. So I think that's a really great example of exactly where we need to sort of be thinking about the multiplicity of interests that produce, that continue to produce race as an important biological... ah, category, I suppose. And not be scared of talking about that, and not be scared about the forms of attention that produce that.

SHEETHAL JOSE: Thank you ‑‑ thank you so much, everyone. Thank you Rebecca for moderating these fantastic questions, and for our panelists, and to everyone for engaging in rich discussion. For those of you who can, please join us for our post‑event discussion to continue our conversation. There's a separate Zoom link that's posted in the chat. It'll begin immediately after, following this session. And we hope to see you in March for our next ELSI Friday Forum, titled Autism Genomics Research: Parents' Views on Genetic Results and Autistic Representation, with Julia Wynn and Holly Tabor, and moderated by Wendy Chung. Also, you'll receive a post‑event survey. I really want to encourage you to complete this, as our organizing committee takes your comments and questions very seriously on how to improve the forum and bring interesting topics and speakers to you. Please do fill that out. Again, thank you for an interesting discussion, and hope to see you in just a few minutes. If not, I wish you all a wonderful weekend. Thank you.