
# S2E8: Transcript
# Diverse Intelligences Summer Institute

with Dr. Erica Cartmill, Dr. Jacob Foster, and Dr. Kensy Cooperrider

**Tavia Gilbert:** Welcome to Stories of Impact. I'm producer Tavia Gilbert, and in every episode of this podcast, journalist Richard Sergay and I bring you conversation about the newest scientific research on human flourishing, and how those discoveries can be translated into practical tools.

In our Diverse Intelligences season of the Stories of Impact podcast, we ask the questions: What are diverse intelligences? What do we understand about ourselves by studying them? And how do those findings support human flourishing?

If you've been listening in to our series of conversations on diverse intelligences over the last several weeks, you'll have met experts in the cognition of whales and extraterrestrials, honeybees, machines, and dolphins, dogs, and humans. And after hearing about their work, maybe, like me, you're starting to think about intelligences differently, and even think about the world differently. In this, the final episode of our second season, we meet three scientists who are creating a community of people who see the world differently, bringing together scholars from around the globe who are passionate about collaboration and exploration of the myriad intelligences throughout the planet and the cosmos.

Today we hear from Dr. Erica Cartmill and Dr. Jacob Foster, co-directors of the Templeton World Charity Foundation Diverse Intelligences Summer Institute. Dr. Cartmill is an associate professor of anthropology and psychology at UCLA, with a background in linguistics and psychology and a particular focus on comparative psychology and animal cognition. Dr.

Foster is an associate professor of sociology at UCLA, and his background is in statistical physics and the study of complex networks. And we'll meet their Summer Institute associate director, Dr. Kensy Cooperrider, an affiliated researcher in the department of psychology at the University of Chicago, who has a background in cognitive science and linguistics and a particular interest in how humans communicate across cultures.

Richard Sergay sat down, virtually, with this team to discuss the Templeton World Charity Foundation's Diverse Intelligences initiative, their efforts to build community with today's young, emerging scientists and scholars, and what they hope will be the legacy of the Diverse Intelligences Summer Institute, or DISI, for short.

**Richard Sergay:** Tell me about the genesis of your connection to Templeton World Charity Foundation and your interest in diverse intelligences.

**Tavia Gilbert:** This is Dr. Foster:

**Jacob Foster:** I was already familiar with the Templeton world when Andrew Serazin became president of TWCF. Now, Andrew and I have known each other and then very good friends actually, since we were Rhodes scholars together at Oxford. And so when Andrew became TWCF president, he reached out to some folks who he had known in various capacities across his career to talk about what might be some of the scientific themes or the funding programs that TWCF might launch, and one of the themes that emerged very quickly in those conversations as something particularly promising was diverse intelligences. And it became very clear that some expertise, particularly of people who worked on animal cognition would be very important. And one of the things that had emerged from the very beginning at that first conversation about some of these themes and in particular diverse intelligences was the importance of involving early career people.

So I think it was very important to Andrew, itt was very important to the foundation that it tried to think about grant-making in a way that would lay the foundation for long-term impact and actually be transformational on even the timeline of an individual scientists' career, but a sort of a multigenerational thing. And because of experiences I had had, it was very top of mind for me that reaching young people was the best way to create long-term transformation, that it was one thing to give established

scientists and scholars money to pursue on-theme research projects, but it was something else entirely to kind of plant the seeds of interest in that area in young people, to connect them to a wider universe of ideas and questions that they might start asking, to build the habit of asking questions early in the career, rather than taking advantage of the fact that people later in their career have the freedom to ask big questions, but maybe more of them have lost the habit of asking big questions.

So as part of making that community bigger, more inclusive and broader, from very early on in that first meeting, I pushed the idea of, we need to figure out a way to reach these people, these young folks, and that a summer institute can be an extremely effective way to do that.

**Richard Sergay:** Erica, I noticed Jacob using the plural diverse intelligences rather than diverse intelligence. So help me understand that term. What does it mean to you and its importance in the cohort that you're building?

**Erica Cartmill:** The 's' on intelligences, I think, is very central to the project that we're trying to accomplish together. It broadens out the scope from the very beginning, right? As soon as you hear it, you recognize that we're not asking about a single thing done in one particular way. And I think the term intelligence, singular, has a particularly troublesome and complicated history, particularly within psychology—intelligence testing, IQs, etc., etc. And that doesn't mean that the concept of intelligence as a singular term is in itself problematic, but I think by purposefully using the plural term, we're highlighting from the very beginning that this is something that manifests in a multitude of ways, that we're open to the constellation of different kinds of experiences, of ways of knowing, of ways of engaging with the world, whether that's across species, across time points over someone's life, across different modalities, different technologies, different societies across the world. And I think that preserving that 's,' which is one of the reasons we try to really emphasize it when we say diverse intelligences, I think is very important because we want to, right up front, place the focus on the complexities, the beauty and the multifaceted nature of ways of understanding, engaging with, learning from, and transforming the world.

**Jacob Foster:** One of the things that I think we notice anytime people first come into contact with diverse intelligences is people forgetting to say the 's'. And I think that actually emphasizes the reality of Erica's point, which is how

wedded we are to a very narrow, singular conception of intelligence. One that, you know, is based on not just human beings, but particular kinds of human beings, and how important and actually radical it is to use the 's' on the end of intelligences, and to embrace that multiplicity of intelligent entities that fill our planet and hopefully cosmos.

**Richard Sergay:** Is there a working definition of diverse intelligences?

**Kensy Cooperrider:** I would say no. I mean, certainly we could offer one up, but it would always seem a little inadequate to the task at hand.

**Tavia Gilbert:** That's Dr. Kensy Cooperrider.

**Kensy Cooperrider:** You know, we talk about the role of learning and adaptability and flexibility and those sorts of things. Those are the kinds of things that come up in these conversations, but I wouldn't want to pin the definition to any one of those and probably eight other concepts that we could throw in the mix, too.

**Richard Sergay:** So, Jacob, help me understand specifically what sorts of examples, hard examples in the diverse intelligences world, is this project interested in?

**Jacob Foster:** I think there are two moves that are going on simultaneously in the diverse intelligences space. One is a move that is in some sense towards greater abstraction, in the sense that what we're trying to do is get away from one kind of example of intelligence, human intelligence, as Erica said, a single mind, in a brain, in a human body, etc., and then the things that radiate out from that and come up with ways of thinking about intelligences that are sufficiently abstract and sufficiently generic, that we can use that language, that conceptual language and that mathematical language to talk about a much broader variety of things.

But then the second move is at the same time, as I would say, in the long run, we have the eye on this horizon of great generality, in practice, what happens often in the short run is also a radical expansion of the scope of particulars that people are bringing into the conversation.

So Erica, for example, has been doing very interesting cross-disciplinary work that looks at the phenomenon of humor and teasing in great apes. Erica is also just starting a project with a network of people that were formed through the Diverse Intelligences Summits and events like this, but

looking at the joyful experience across many different species, drawing on a rich philosophical tradition of thinking about and examining phenomenal experiences like that. There's also some really interesting work, using virtual reality to explore the behavior of nonhuman primates. And I think they're actually starting to expand it even beyond mammals, but coupling the kinds of experiments you can do using virtual reality techniques or rich, immersive video game-type experiences to ask questions about primate behavior. But then that is coupled to the use of methods coming from computational cognition, machine learning, artificial intelligence research, to try to understand things about the behavior of those agents that is easier to surface because of their activity in those virtual worlds. And one of the things Erica and I are doing is looking at science itself and in particular, the science of diverse intelligences as a kind of case of the manifestation of a collective intelligence. I would say in my own work, I have increasingly adopted this point of view that with science, what we're trying to understand is how a particular kind of social organization can enable lots of people and technologies working together to do things that none of them could do individually or collectively if they were not organized in this very particular way.

**Richard Sergay:** Erica, the work that Jacob described that you're up to in terms of joy and humor and research in non-humans, does that help us understand ourselves better too?

**Erica Cartmill:** I certainly think that it has the potential to help us understand ourselves better. A lot of the comparative research that's done broadly in the world is inherently egotistical in nature. You know, we're studying the other in order to better understand ourselves. One of the things that I think is very refreshing about the Diverse Intelligences Initiative is that the pursuit of knowledge about other species doesn't need to be motivated purely through a desire to understand our own evolutionary history. Instead, it focuses on the idea that there is something meaningful and perhaps beautiful in seeking to understand other manifestations of knowledge, intelligence, being that could be quite different from our own. And so understanding the humor in great apes or understanding the ways in which dolphins and parrots and primates experience moments of joy, help us understand not only the potential scope of the ideas of humor and of joy, but also help us understand and develop a deeper appreciation for the complexity and diversity of the worlds in which we live.

**Richard Sergay:** Kensy, I'm interested in your reaction to that because you said you study how humans think. So this is clearly a multidisciplinary approach that looks at knowledge, in some sense for knowledge itself, that we learn about a diverse world, whether it be dolphins or parrots or others, and let that in some sense sort of wash over us. It doesn't have to help us understand human evolution.

**Kensy Cooperrider:** Any investigation of these questions, whether it's, you know, parrots or dolphins or great apes, is going to ultimately inform our self understanding as well. Whenever you're looking at the behaviors of another, you're always implicitly or otherwise comparing them to your own behaviors, to what you think you know about yourself. As Erica pointed out, there's the issues of how we understand our own minds, how we understand our own knowledge-making and cognition and so on, but also a larger question of how we understand our place with respect to these other beings and other forms of intelligence, how we understand the ethical dimensions of how we interact with those beings.

**Richard Sergay:** Jacob, in the landscape of people studying these sorts of issues, the Templeton project seems to be quite unique.

**Jacob Foster:** I would say so. So if you think about diverse intelligences and the many allied fields that are coming together under that umbrella, studying mental processes, studying intelligences. And a lot of that is motivated by trying to understand our own biology and our own physiology for the purposes of biomedicine. But there is also a broader way of thinking about studying life, which is to not just appreciate but actually understand its diversity, and I think in so far as we aim at a deeper knowledge of what life is and how it works and how it emerged, asking those very fundamental questions, that stepping back has been very important. And of course, in the long run, that stepping back, ultimately, can produce insights that are profound and transformational. And I think Diverse Intelligences is doing that same move, but in the space of intelligences. It's saying let's bring together these different conversations that are going on within different disciplines about what intelligences are, where they come from, how they manifest, how they work, and putting them in conversation with each other in ways that would be very unusual if not outright rejected within particular disciplinary conversations.

There has been an increasing realization that moving to the next level, to

get beyond all of the amazing things that we've been able to achieve through the kind of machine learning and deep learning revolutions of the past decade require moving up in that level of abstraction and our understanding of what intelligences are, and in particular, the idea that machine intelligences and building machine intelligences that are humane and actually beneficial to humanity and work might require looking to cases that are very different from our own. There is this increasing realization that we need to be looking to orangutans, to slime molds, to you know, collectives of scientists, to all sorts of different places, for ideas about that fundamental understanding of what intelligences are, and how they work. We've brought the players together. We're starting to pull that really rich and broad base of empirical evidence together. Now let's try to look for the big patterns. Can we pull out those big, very broad, fundamental concepts in the space of intelligences?

**Richard Sergay:** Erica, since you're several years into the project, tell me a surprise or two, an aha moment that's emerged from the DI project.

**Erica Cartmill:** I've been really shocked and impressed, say, by Andrew Barron's work on honeybees. You know, just thinking about the ways in which a being that is very, very different from a human body plan, from a human neurological structure, from a human social structure, from a human life history can understand its worlds and communicate aspects of that to other hivemates.

The honeybee waggle dance was one of the most intriguing things that I learned in college. As someone who's studied animal communication for my whole career, the honeybee waggle dance is something that's really the gold standard. You have human language, then you have honeybee communication and then you have, you know, all other species and, as long as I can remember, people have been saying, you know, if chimpanzees did a honeybee, waggle dance, we would say they had language, but because these are bees and they're so different, we want to describe that in very different terms.

And so I think that some of Andrew Barron's work has been really illuminating in diving deeper into our understanding of those systems. And in particular, we're talking about getting down to what intelligences are, right? And I think that his work has been very illuminating and in turn has made me think not just more about the honeybee, but more about our own

ways of thinking about and processing the world. You know, maybe a lot of things that we're doing as humans or that my study species as apes are doing are in fact a lot simpler or potentially a lot simpler computationally than we might like to think.

**Richard Sergay:** Interesting. Kensy, you're next.

**Kensy Cooperrider:** So I think for sheer, mind-blowing wow factor, for me, it's hard to beat the stuff on birds that I've learned about through the DI community. I'm thinking in particular of, you know, these incredible feats of problem solving by corvids, by these crows that Alex Taylor studies, I'm thinking also of work on ravens caching food and so on. I mean, it's just incredible, some of these things they do that clearly go beyond what humans could do, or at least what this human in particular could do. I mean, some of that problem-solving, I'm like, I'm not convinced I would have come up with that solution on the spot for that problem. But I think also the sort of deeper scientific lesson that I've taken from that is that there are these whole lineages out there, these whole animal lineages that create this amazing little opportunity to study variation, like within the bird lineage. For example, it's not the case that all birds are as smart as crows, or can do these kinds of amazing feats of problem-solving. So we get an opportunity there to ask really interesting questions about how ecology and evolutionary history lead to these kinds of feats. I have been really blown away by that work and I continue to be blown away every time I learn more about it.

**Richard Sergay:** Jacob. The aha surprise moments for you over the last couple of years.

**Jacob Foster:** The Summer Institute and the Summit have been full of events that just like spark those mind-blowing connections. It's very interesting dynamics because we bring together and sometimes it just like randomly happens, that folks at wildly different ends of the academic landscape are, like, giving lectures right next to each other. So we had a lecture by Eleanor Oaks, who's like a super foundational figure in the field of linguistic anthropology, talking about narrative. And then David Krakauer, who's president Santa Fe Institute was giving a talk about intelligences in a very broad, kind of theoretical biology perspective, giving an interesting definition of what intelligence is, the connection between evolution and learning. And so like you had on the one hand this very rich, interpretive, truly humanistic social science talk and then like, a super technical talk. And then they had this Q and A discussion that was about how some of

the things David was talking about in terms of the roles of models in intelligence were so deeply aligned with the way that Ellie Oaks was talking about the role of narrative, and so there was like this beautiful riff, but it was kind of, here is an example of watching these two consummate experts in very different fields, show you how to do the, like, jazz improvisation of really high-level, intellectual, transdisciplinary conversation, like right there. And at the end, I was just like, I hope everyone was paying attention, because that is the kind of thing that we want to make you able to do.

**Richard Sergay:** That's a good segue to the Summit and the Institute. What is the Summit and what is the Institute, and what sort of impact do you hope it is having?

**Jacob Foster:** The goal behind the Summer Institute is really to create that cohort of scientists and scholars and thinkers and storytellers who will bring the DI work forward for decades to come. And a big part of doing that is to connect them with the ideas that they need, the kind of most exciting, often most distinct or different ideas from across the disciplines that look at intelligences. The second thing is to help them connect with each other. So it's very important to us that we develop a kind of sense of identity, where you can recognize people, not just who went to your Summer Institute, but people who have been to DISI in general, as part of a community that have had similar transformational experiences. So a big part of that is helping them connect with each other and learn how to practice that very generous and generative conversation across disciplinary lines and all sorts of other social positions.

And then the third is to actually give them practice coming up with these transdisciplinary projects. So we ask them to do projects in teams that are supposed to pull from many different disciplines and try to ask questions together that they could not ask individually. And so by doing all of those things, we hope that the DISI alum community will really be this kind of seed bed of future great ideas and future great scholars in the DI space, and we're very hopeful, and this year was actually our first year doing a multi-cohort alumni event where we had alumni from the two previous schools come together and talk. And it’s just amazing.

So the real goal is to build that community of future DI scholars who don't have to do as all of us did and kind of stumble into this space and learn in various places how to ask questions across disciplinary lines and ask big

questions, but emerge into the world from the get-go drawing on these broad references and knowing how to ask those big questions.

**Erica Cartmill:** You know, as Jacob was saying, the three main goals of the Institute are to connect promising minds to new ideas, to connect promising minds to one another, and then to generate new ideas. A lot of the goals for the Institute, as well as the structure of the Institute itself, have come out of our belief that the most exciting, transformative, boundary-pushing ideas in science are fundamentally interdisciplinary or come out when people with different backgrounds, different knowledges, different theoretical canons come together and engage in meaningful discourse.

And unfortunately, that's not something that I think traditional academia trains very well. Graduate school for most people is getting training in one discipline, in one theoretical canon, in one set of skills, in order to make sort of small increases in knowledge from within an established canon and methodology. And that that has a lot of benefits, but it has big limitations when it comes to preparing people to do the kind of radical, interdisciplinary or transdisciplinary thinking that really has the potential to not just to make advances in the current types of knowledge and current types of science that we have, but in really developing new types of knowledge, new boundaries to push, new kinds of questions to ask. That's really been one of the main drivers in the ways in which we have thought about assembling classes of fellows for DISI and the ways in which we have designed the experience that they have at DISI is, first we really focus on, on creating and communicating an ethos of openness, vulnerability, and dialogue between the people that come. That no discipline is harder or better or more prestigious than any other, that every person, every discipline brings their own things to the table, and that it's okay to communicate that you don't understand things.

So one of the things that we're trying to train people to do is not just to communicate across disciplines and with a wide variety of people and ideas at DISI, but to really create skills and methods of inquiry and methods of discourse for themselves that they can take back to their institutions and will carry forward in their own careers, but will also spark dialogues and ways of interacting with the people that they encounter. So really, our goal is to seed and transform through this kind of ripple effect, a more interdisciplinary, more generous, more open way of doing science.

DISI isn't trying to teach people a particular set of skills or a particular methodology. We are trying to teach people a set of skills in terms of how to talk to one another, how to absorb new ideas, how to listen and think generously. But the main point of the lectures is to plant these seeds about different kinds of inquiries and to expand fellows' ideas about the range of what is possible. And so that's really the goal of having a series of lectures early on, is to push the boundaries of what individual fellows think is a possible acceptable form of inquiry about intelligences, and to seed them with those examples and then sort of set them loose to interact with these other fellows, other minds, and to generate new ideas and new approaches through working with one another.

**Jacob Foster:** And if I can just build on that, it is a way of training people in intellectual humility. And the contemporary Academy, although humility seems like it should be one of the primary values of successfully pursuing inquiry about the social, human, natural world, I would say the current system of incentives in the Academy pushes people to pretend like they know more than they do, to not reveal their ignorance, to not ask questions that suggest that they don't know things they think they should know, to overstate their understanding, to delude themselves and others into how deep their insight and their understanding goes.

And at DISI, we make very clear from the beginning that this is a space, this is a little, protected community where we want to practice a kind of radical intellectual humility, where we understand that there will be a lot of things where people will have no idea what's going on, and it's okay to not know what's going on. And it's okay to say you don't know what's going on and to learn from others, and to likewise give your insights to others when you do have some idea of what's going on. And we think that's a very unusual stance to take, and one that many of the participants, who are principally graduate students, have said has been a really distinct and profoundly impactful experience for them, because they've not been in a context where, say, they, as a linguistic anthropologist, are you know, taken very seriously by someone who is a fancy AI researcher.

**Erica Cartmill:** Yeah. I think one of the things that Jacob and I have found most rewarding in this experience of creating this community is when people have said things like, this is what I thought graduate school would be like. [laughter]

Right? Um, or this is what I thought academia would be like, or this is what I hoped it would be like, but it hasn't been until now.

**Jacob Foster:** Or this has restored my faith in academia.

**Richard Sergay:** Pivoting off of what both of you so eloquently said, I'm going to start with Kensy on this, which is the legacy of the Diverse Intelligences Project.

**Kensy Cooperrider:** That's very much a top of mind question for all of us. I think by prioritizing sowing the seeds of the younger generation, I think the project actually does stand to have kind of an amazing legacy in a community that has a recognizable identity, a community that has a certain degree of sort of warmth and rapport that they can carry forward as they train new scholars as they go into other pursuits. So I think that move, that initial move to kind of prioritize the younger generation was a brilliant way of securing that longer term legacy.

**Richard Sergay:** Jacob?

**Jacob Foster:** I probably have the most crazily ambitious idea of what the legacy for DI could be, but, I think we look back in the history of science, and there are often these pivotal events or meetings where profound changes are born, like some of the early meetings that helped establish artificial intelligence, some of the meetings that were important in establishing cognitive science, some of the meetings that were important in establishing our modern understanding of quantum field theory. And I hope that we will look back on these days of the Diverse Intelligences Summer Institute, these DI Summit meetings, and then what comes next, and as Kensy said, this is at top of mind for all of us, because we're at this midway point in the initiative where we are starting to think about legacy and where all of this is going.

I hope that we will look back from, you know, 30 years in the future where hopefully all of the work we've been doing will help us save the planet, not wipe out all of the amazing species that we live with, be capable of communicating with extra terrestrials in a responsible fashion, and have genuinely humane and beneficial artificial intelligence. I hope we will look back from that point in time and say, this was the moment when people finally came together around one of the most profound things in the universe: matter, life, intelligences, and asked the question, “Can we come up with an understanding of what intelligences are, where they come from,

how they work, that is as deep as those questions actually are?" And so I hope we'll look back at this time as the birth of a new movement for approaching intelligences with the imagination and openness and radical variety of reference that the term deserves.

**Richard Sergay:** Erica?

**Erica Cartmill:** One thing that I think is perhaps more of an immediate goal is that I hope that DISI affects not just the kinds of questions and science and scholarship that the fellows feel empowered to work on in their own careers. But I also hope it leaves an impact on the ways in which they build their own communities of scholarship. When they are starting their own labs, when they are in charge of launching a symposium or a journal club, or are starting an interdisciplinary institute at their own university, I hope that AI researchers will think about bringing philosophers and anthropologists to come and speak, and vice versa. And that that generous listening and radical interdisciplinarity will permeate not just the research projects that people choose to work on, but the ways in which people engage in scholarship with others and inspire still future generations to do the same.

**Richard Sergay:** Erica, Jacob, Kensy, that was superb. We've gotten an interesting, deep, short look at Diverse Intelligences, and I know we didn't get to the alien part of our conversation, but in a future conversation, we will. And I appreciate your time, and we look forward to talking to you again about this important subject.

**Jacob Foster:** Thank you so much.

**Erica Cartmill:** Thanks so much.

**Kensy Cooperrider:** Thanks, Richard.

**Tavia Gilbert:** Thank you so much for joining us for this incredible series of conversations with some of the world's leading scientists into diverse intelligences. What has been most inspiring to me as I've gotten to tell these stories, is how much human virtues like cooperation, service, friendliness, intuition, curiosity, protectiveness, understanding, and empathy have emerged from the scientists' work. That gives me a sense of greater hope for the future of humanity and our planet. I hope it does

you, too.

If you want to learn more about the work at the Diverse Intelligences Summer Institute, be sure to check out the Many Minds podcast, hosted by Dr. Cooperrider.

After a short break, we'll be back with our third season, featuring interviews with scholars focusing on citizenship. One of our first episode guests is Andrew Briggs, professor of nanomaterials at the University of Oxford, and one of the authors of a report on Citizenship in a Networked Age: An Agenda for Rebuilding our Civic Ideals. Here's a preview of that conversation with Dr. Briggs:

**Andrew Briggs:** We need to hone and refine and develop these skills of listening, listening to what people are saying, listening to the justification that they have for what they're saying, but also listening to what they're feeling and experiencing, because that's essential if we're to create harmony in our community, and if we're to create harmony as good citizens.

**Tavia Gilbert:** We look forward to bringing you that first in what promises to be a fascinating and timely series of discussion about our rights, responsibilities, and opportunities as global citizens.

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