

**Putting Descartes before the (education) horse:  
Speculations on bio-technological evolution,  
multispecies relationships, and human exceptionalism**

**Abstract**

This virtual session explores issues related to education and learning in an age where human-exceptionalism is increasingly being questioned from both a deeper understanding of our connectedness to life on the planet and the advent of General Artificial Intelligence. Both of these perspectives suggest that the difference between human and non-human species is just a matter of degree, not of kind. Specifically the session will explore the educational consequences of rejecting the dominant Cartesian worldview for a more interactionist, interactive, multi-agentic worldview. We bring together two acclaimed speculative fiction authors and two recognized educational scholars to discuss how our deeply interconnected pasts and emerging futures relate to learning in the future.

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*Dolor ergo sum (I suffer therefore I am)*  
— *Rephrasing Descartes' phrase "I think therefore I am"*

*It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties. It matters what stories make worlds, what worlds make stories.*  
— *Donna J. Haraway, Staying with the Trouble: Making Kin in the Cthulucene*

**Introduction**

The role of education, in the deepest sense, is to help us understand ourselves, our place in the world and possibly better equip us to navigate it. Science tells us that we, humans, live on a rock that floats in space, stuck between two incomprehensible infinities—that of the incomprehensibly large and the infinitesimally small. The very atoms (the infinitesimal) that make us were forged in immense supernovae billions of eons ago. Our existence is embedded within and constrained by powerful geophysical forces. We co-exist within a complex dynamic network that is continually evolving: the web of life and nature. We are of the world.

Despite this knowledge of the interconnected and interdependent nature of our existence, we have been conditioned to take a very different view of ourselves and our role in the world. For too long, we have convinced ourselves that we, humans, are unique and distinct from each other, from other species, and from the rest of the world. We have self-anointed ourselves as stewards and saviors of the planet, and have undervalued the importance of the other denizens who share our world. We convinced ourselves that intelligence is solely our domain and denied it to any other species, believing that they can neither feel nor think nor communicate in any meaningful way.

It has become clear, however, that we are not so unique after all. We have come to recognize that there are many valid ways of being in the world, reinforced by shifts in scientific thinking about artificial intelligence, plant intelligence, and animal consciousness, suggesting that the difference between human and non-human species is just a matter of degree, not of kind. At the same time, we

wonder and worry whether the rise of Artificial General Intelligence will achieve consciousness, and dethrone us from this exalted space we have given to ourselves.

Finally, we are confronted by the fact that our hyper-separation from the natural world is threatening not only other species, but our own survival as well. Whether thinking about our relations with the machine or with nature, it is clear that our fates and futures are deeply interconnected and that our survival depends on our capacity to live *together*.

At the core of the problem is the dominant Western cultural view of human exceptionalism, placing our species outside of, and above, nature. Arising from the 17th century Western Enlightenment ideals, especially the work of René Descartes and Francis Bacon, this view endowed humans with sentience, agency, reason, and rationality. It simultaneously reduced the rest of nature as mute and blind (yet always knowable) thus exploitable to benefit us, humans, in the name of growth and the so-called 'progress.' We have reached a point, however, where continuous reliance on human exceptionalism is threatening the survival of everyone and everything on earth - humans, non-humans, and ecosystems alike. To respond, we need to radically change our *culture*, redefining what it means to be human and reconfiguring our relationship with the earth in more relational and interdependent ways.

The Cartesian framework, that assumes a schism between us and the rest of the universe, has become part of our dominant worldview, influencing everything from how we approach international policies to how businesses engage in decision making to how we think about education and its role in preparing our citizens for the future. Clearly the Cartesian worldview, if taken as being foundational, will have significantly different consequences than a more interactionist, interactive, multi-agentic worldview.

This panel seeks to address these issues of human exceptionalism and its implications for education from a range of perspectives. We believe that any headway made in this space has to adopt a multi-dimensional approach, one that integrates academic, scientific approaches with the artistic and speculative. These separate lenses (logical/rational and artistic/empathetic) when combined will allow us to "see" these issues with 3-dimensional clarity and imagine much needed alternatives.

This panel will bring together award-winning writers of speculative fiction with academics and scholars. At the heart of this process are two stories, written by Simon Brown and Shiv Ramdas, that approach the issue of human exceptionality from two completely different directions. Simon's story ([Speaker](#)) questions human exceptionalism through imagining a conversation between a hyena and a human, while Shiv's ([The Trolley Solution](#)) story focuses on an AI that functions as a human-interlocutor in an educational context. Thus, one story focuses on what we are learning about our evolutionary history and our connection to the living world (Simon); while the other looks to the future where advances in AI technologies chip away at some fundamental constructs (such as intelligence and empathy) that we have for too long taken to define what it means to be human.

The two other participants in the panel are Dr. Iveta Silova and Dr. Punya Mishra (who also functions as the host of the panel). Dr. Silova has explored the possibilities of "education beyond human" through speculative thought experiments that seek to (re)imagine what it means to be human and (re)configure our relationship with a more-than-human world. Dr. Mishra brings a deep interest in creating humanistic, educational futures through collaborative design based approaches.

## **Participant Bios (in alphabetical order by last name)**

**Simon Brown** has written over 50 short stories which have been published in Australia, the US, the UK, Poland and Japan. He has also written eight novels, all published in Australia; the last six were also published in the US and Russia. He has worked as a journalist, copywriter and communications officer for government departments, universities and charities. He currently lives in Vientiane, Laos. His website can be found at [simonbrown.co](http://simonbrown.co)

**Punya Mishra** is an educator, researcher, designer, artist, and professional dilettante interested in life, the universe and everything. He is particularly keen on shoehorning Douglas Adams' book titles into his bio statement. He is currently associate dean of Scholarship and Innovation at the Mary Lou Fulton Teachers College at Arizona State University. He can be found at [@punyamishra](https://twitter.com/punyamishra) and [punyamishra.com](http://punyamishra.com)

**Shiv Ramdas** is a multi-award nominated author of speculative fiction short stories and novels. In 2020 he became one of only two Indian writers to ever be nominated for a Hugo, a Nebula and an Ignite Award in the same year. His short fiction has appeared in Slate, Strange Horizons, Fireside Fiction, Podcastle and other publications. A graduate of the Clarion West Writers Workshop he has also penned numerous advertisements, radio segments, audio plays and resignation letters. He can be found at [@Nameshiv](https://twitter.com/Nameshiv) and [shivramdas.net/](http://shivramdas.net/)

**Iveta Silova** is professor and associate dean of global engagement at Mary Lou Fulton Teachers College at Arizona State University. Her research examines the intersections of postsocialist, postcolonial, and decolonial perspectives in envisioning education beyond the Western horizon. She is particularly interested in childhood memories, ecofeminism, and environmental sustainability. She can be found at [@IvetaSilova](https://twitter.com/IvetaSilova)