# Session IV: Turbocharging human intelligence with Artificial Intelligence

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My name is Ian Oppermann. I'm the New South Wales Government Chief Data Scientist and Industry Professor at the University of Technology, Sydney. We have a panel today of distinguished people who are versed in the art of mathematics, statistics, and artificial intelligence from various different perspectives. With us are Professor Lyria Bennett Moses, Associate Dean at the Department of Justice and Law at the University of New South Wales and also the director of the Allens Hub for Technology; Stela Solar, the director of the Responsible AI Network which is hosted by the CSIRO; and Professor Sally Cripps, one of the founding directors of the Human Technology Institute hosted by UTS and also a professor of mathematics and statistics at UTS. It's a little bit different from what we've been talking about earlier.

This panel session was devised thinking about the interaction between human beings and AI. The basic premise is that, whilst there were many factors that enabled the growth of the human brain during the evolution of the human species — access to fire, the ability to extract more nutrients from our food, movement to a meat-based diet that enabled the growth of the brain — the necessitation of the growth of the brain came about principally or partly because of the interactions of people in increasingly complex society. That's the basic premise. If we move from people interacting with people creating more complex societies to people interacting with increasingly intelligent artificial intelligent sources, the question is: what is the implication for our human brain in the 21st century?

We heard the Governor this morning say, "My brain of 25 years ago doesn't seem so terribly different to my brain in the 21st century." Interesting comment. We heard Professor Paxinos talk about the fact that the hardware of the brain has not physically changed in the last 100,000 years. But what we expect of it certainly has. And we think about Artificial Intelligence as something external that we engage with, something that is increasingly becoming sophisticated, something increasingly that can do things, specialised things, in some cases better than human beings. We saw the advent of generative AI as of November 2022: something that can do a broad range of things arguably better we can: in very strict conditions, generative AI, large language models, outcompete human beings in terms of completeness and accuracy of responses to health questions, and can also be considered to be more empathetic.

But AI is not something we just engage with externally. AI is something that increasingly we will engage with as part of us. There's a really interesting thought experiment that I heard once on a podcast where the premise was that if you took a human being and you replaced one living

neuron with a silicon neuron and there was no difference, and you kept replacing them, and kept replacing them, and kept replacing them ... at some point you take away that last living neuron and replace that person with silicon. And the question is are they still the same person? It's a thought experiment, of course, and there's a whole lot of technological challenges we'd need to approach in order for that to be a real experiment. But it does raise the question: if love is not generated in the stomach, if love is not generated in the heart, if love is not generated in the brain, possibly it is generated in the brain, then possibly we could have silicon love in a silicon brain. So without further ado, I'd like to introduce our first speaker, Professor Sally Cripps.