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Navigating the AI revolution

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An Australian cultural anthropologist is helping the world find its way in the new era of artificial intelligence (AI).

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World-renowned 'techno-anthropologist' Professor Genevieve Bell is creating an entirely new academic

discipline that could change the way we think about technology.

With the emergence of artificial intelligence (AI), machine learning and big data, Bell believes the world needs a new applied science to help us understand and manage these technologies and their unprecedented impact on humanity. So she's set out to build one – within five years.

This will be her focus as Director of the Australian National University's (ANU) recently launched Autonomy, Agency and Assurance Innovation Institute (3A Institute). Co-founded by Data61, Australia's largest data innovation network housed within the nation's science agency CSIRO, it will bring together some of the world's best thinkers.

"[People] have spent a lot of time in the last couple of years talking about artificial intelligence and AI technologies," says Bell. "I get why people are so focused on that conversation. But I'm convinced we're having the wrong conversation.

"I have a historical and a cultural lens and I keep saying to myself: this is going to be so much more ... And part of it is I'm obviously just a bit crazy," she jokes.

Bell is back in Canberra, where she spent part of her childhood, after almost two decades in Silicon Valley. In 1998 she was plucked from Stanford University by Intel ("I met a man in a bar – which is how all good Australian stories start") to help the tech company reinvent how people experienced computing.

She was instrumental in getting Intel to think about people as part of the process of developing technology, and she remains a Vice President and Senior Fellow.

Making the digital world a better place

Joining ANU is a homecoming of sorts: Bell's mother is also an anthropologist and a researcher at the university.

"[My mum] was really clear that you had a moral obligation to make the world a better place and you needed to put your energy into doing that," she says. "I had done that for a long time in Silicon Valley...But [there] was a very particular piece of work I wanted to do, and Australia and the ANU were the places to do it."

As well as heading up the 3A Institute, Bell is a Distinguished Professor in the ANU College of Engineering and Computer Science and was named the university's inaugural Florence Violet McKenzie Chair, in honour of Australia's first female electrical engineer.

Bell's professional achievements over the past two decades are a story unto themselves. More recently, the woman who held the title of Chief Futurist at Intel presented the Australian Broadcasting Corporation's (ABC) 2017 Boyer Lectures, a series of talks by prominent Australians about major social, scientific or cultural issues. She opted to explore what it means to be human, and Australian, in a digital world, a theme that drew her back to Canberra and the ANU.

The three big questions

With Bell at the helm, the 3A Institute will bring together researchers from disciplines as disparate as engineering, computer science, sociology, anthropology, theatre and cultural geography. Bell will spend the next year building her team and hunting down top thinkers.

While she doesn't yet know what the new applied science will be called, she has developed three critical questions it will centre on – and these will provide a starting point for the institution's work. First, what does it mean for cyber-physical systems to be autonomous and what are the implications of that? Second, how much agency will machines have? What limits will we place on them? Third, what about assurance (risk, indemnity, privacy, trust)? How will these systems be safe?

How on earth does one go about answering those questions – and then go on to create an academic discipline?

“Start broad,” says Bell. “Start by looking for divergent viewpoints, keep the lens open as wide as possible. Ask a lot of questions and answer very few. Talk to lots of people. Speculate. Play a little bit. Read widely... Try and create spaces where people can come and talk about that stuff without it being a search for the right answer. Be a little bit brave, a little bit crazy.”

For someone embarking on a mission which has global ramifications, Bell is full of humour and modesty, her trademark laugh tumbling out of her sentences. As if she can't believe the good fortune of having placed herself in such a position – while being keenly aware of the mountain looming before her.

Left of centre

Being Australian has proved to be a point of difference in a highly distinguished international career.

“I think one of the reasons for doing this work [in Australia], is that it's really hard to build something like that in the centre of everything,” she says.

“There's a little bit of power in being slightly removed from the centre of that conversation. You get a little bit of critical distance.

“One of the real joys for me about being Australian is that as a nation and a people we reinvent ourselves regularly. We have room for that. And I think that's always been a strategic differentiator.”

According to Bell, Australia occupies a key role in the current technological era.

“We have one of the largest deployments of autonomous vehicles on the planet in our mines. We are the site of a number of interesting trials in terms of drones and a bunch of other stuff. We have a range of organisations that are at the cutting edge. We have a strong tradition of computer science in Australia. And we have a strong tradition in Australia around machine learning, AI and robotics.”

With Bell now pioneering a new way to understand and manage these game-changing technologies, she is cementing Australia's position at the leading edge and carving out her own place in history.

Find out more about the [3a Institute](#).