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AI and Indigenous ways of thinking

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Na Jaky *na um Naru*. I'm Jaky, I'm *Naru* and I'm from the *Nich* clan. Some of you would know Namagee National Park in Canberra, that area so Snowy Mountains people *um nari n g*. Today we are gathered here, we're sitting down, as the word *nangun* says, on this beautiful country that belongs to the Gadigal, the clan group that were in this area and are still in this area which is a great thing for all of us. Sydney has about 27 or so clan groups, many of them known by their name, and I think that's something that is enriching everybody's lives. It's been very uplifting to hear people today acknowledging country and people. I don't see this is any way tokenistic and I'm really glad that it's continuing in spite of the sort of ridiculous rubbish and non-communal nonsense that's come about as a result of the recent referendum.

I had a catastrophic loss in the last few weeks: my husband, Pádraig, died at a young age, from stage-four lung cancer. Actually it was the complications from that, as you'd probably know, that usually take people out. What happened was his beautiful mind decided enough was enough, and I could see that process happening.

That's one of the things I will talk about today because I want to knit it into my own sense as an Aboriginal person of community and what it means to be forever part of a community and forever part of the world, even when you're physically gone.

I was listening just now, looking across to this beautiful tree to lift my mood a little, I want to tell you — and you will never look at a Moreton Bay fig ever the same way again — that beautiful Moreton Bay fig is inhabited by our cousins, a family of kookaburra who've been feeding each, other grooming each other, and doing all sorts of other things that birds do at this time of year to create more little kookaburras. The Fig Tree is actually inhabited by a spirit, and he has enormous *burras*, as we say — testicles — that he bounces around and clangs together. We've been hearing a clock chiming and I was thinking to myself, maybe he's somewhere around here. I'm telling you this not just for some light relief but also because that's how we as Aboriginal people perceive the world. Everything has a life force, everything has its own personality, if you like, its own brain. I'm looking at you, neuroscience people.

We are part of everything. I was sitting with my colleague, Hans Pols, and we were musing about what's missing from the conversation: our friends, furred, feathered, scaled, chirping, whatever, who are actually — from an Aboriginal point of view, from an Indigenous point of view worldwide, actually — our family and our friends. The trees are our ancestors, the birds are our cousins, brothers, sisters, aunties, uncles, family, you know, they all have an interaction with us all the time, and I

1 This is an edited transcript of the address [Ed.]

think that enriches our Indigenous minds in a way that unfortunately a lot of the rest of the world — the Western world we often characterise it as — have impoverished themselves by not engaging. So, yes, it's about bloody time we were able to take our pets, as we call them, wherever, but they're our family members. I think I'm going to be struggling to take the horses on the train, but I'll give it a shot. I have seen people take horses up in elevators, but there you go.

I also want to talk about how it is for Aboriginal people in Australia. Our session is about the increasing complexity of our lives and we've heard earlier about how technology — meaning tablets — sorry, I've actually got I've got some great technology here: it's a book and paper and a pen: when that sort of thing became common usage — it's only a few hundred years ago really — the first printed books were considered the work of the devil and extremely shocking. I gave my child — she learned learn to read playing Pokémon actually. It's really good. It's a very complex language, in that she struggled a lot with reading and writing at school, but at home she was doing very complex things, using technology that she was engaging with. I like to engage with technology. As an Aboriginal person, I weep that we are now technologically and intellectually impoverished.

In 1788 when England invaded right here and took most of Australia gradually and then increasingly rapidly, they also took most of our 407 languages. All of you, everybody, you've lost 407 languages. There are about 15 languages that are still strong, but none of you would know any of them, I think, except Diane Eaves, who's in our audience today, and is a great linguist as well of Australian languages.

How do you feel about that — 407 languages? And those languages are not related to any other languages in the world — they are extraordinary languages, and they are so complex that you can say everything you need to say — everything I've just said — in a lot less of an utterance: a few short sentences. You could say, to use a twee English description of grammar. I've just said to you a whole lot. When I said *Naregu* immediately, for my community, that evokes all the things that it is about being *Naregu*. I don't have to say anything much else. I don't have to explain anything. This is because our communities knew each other. Still do, but we can't use our languages. Only 15 languages are still really strong. We're renewing most of them. That's the good news. You will have your 407 languages back soon. I'm looking forward to that.

This kind of loss of everything that language gives you — we've heard about that today — connectivity. We didn't ever care about writing systems. Literacy is just not a thing in the Indigenous world. You can get by without it. But we have embraced digital literacies because they're so much more interesting. For a start, they've got lots of visuals, which is good, so you know we have also taken our extremely highly developed technological kit, right. An Aboriginal person could get through a day with a sharpened stick, basically, something to carry a few things in, and being very physically fit. But also all that deep knowledge held in their brains about everything to do with everything around them. And no need to carry any aide memoire. That was just: we knew what we were doing.

I once had a friend from the Western Desert say to me that by the time a child is four years old in his area, they are a complete

socioeconomic unit — they're able to go out and hunt something, kill it, prepare it, and feed other people. And that's a four-year-old child. That would be a horror. Imagine sending a child from any Sydney family out: "Okay, you go catch yourself a lizard, bring it back, cook it up, and feed Grandma." That's just not going to happen. I mean, even "light a fire, what?" We now have all these safe spaces for kids and that probably wouldn't include doing any of that.

We've taken this kind of understanding of how to live well in country, with everything in it over the last 65,000 years (at least that's the archaeological record suggests; actually it's 72,000). Now the oldest sites where people were preparing food and living well up in the north of Australia and people are suggesting now 120,000 years. I've often said to people when they say, "Well, you know, but you've got no, like, big structures or you didn't have a wheel or you know none of these things" and I say, "Well, we spent, you know, we'll say, 120,000 years developing ourselves as very complex social beings. We have, in our languages, ways of dealing with everything."

So just for a little light relief. Mothers-in-law and sons-in-law never talk to each other directly in most Australian languages. Genius. Imagine all the social dissonance that we would be without if that was practiced more widely.[2]

Just to get through an average day, people would speak at least nine languages: there's child language — and I mean actual child language, not just actually speaking to children in their own language — people would use ceremonial languages, love magic languages — that one I think would be interesting to explore, don't you think? It comes from the brain not the heart. We actually know there is a brain. Original people are very aware of that, although most things happen from the stomach, the kidneys too. So those other organs. The heart's kind of irrelevant. There's all these sort of ways of engaging with each other that we've lost, and we're trying to get it back. It will never be what it was. In a short space of time — just over 200 years, we've lost so much. All of you have lost so much, because of what's happened here, but we can engage with it. And that's part of what I've been doing as a linguist and anthropologist for a long time now.

We're presenting our students. I'm going to name my student, Majah Tali, from Northwest Pakistan, from Swat. When I first went there, all I knew was Pakistan is terrifyingly full of terrorists, and that area is particularly bad. But very interesting — great Indigenous languages, so I must go there. Sydney University was like, "You definitely are not — that is a red zone and there are genuine terrorists there."

Well, when I went there, sadly, I met not a single terrorist but I actually met people … I could template my indigeneity directly onto their indigeneity. And I just fit it in. I'm a mountainy Indigenous person and they're mountainy Indigenous people and people said to me there, "Oh, you're just so like a Pakistani woman, you're just so much like our people." That's because we have this whole other world — an Indigenous world — that I would really love more people to engage with.

2 The Kimberley Bauhinia or Jigal tree (*Bauhinia cunninghamii*) is so called because its leaves face back to back as in the term *Jigal*, used to describe the (avoidance) relationship between son-in-law and mother-in-law in Aboriginal culture: the two must not directly face each other. [Ed.]

We've heard a lot today about researchers saying, "Engage with our research." I think if we could just engage a lot more with Aboriginal Australia, and Torres Strait Islander peoples as well, this country would actually solve, I think, some of the questions raised in other research areas.

We are different. A lot of what was said this morning fits really nicely with a Western, Anglo-centric, English-language-centric point of view, but it doesn't really fit or sit comfortably with me, frankly. And I don't think it does with my colleague, Mujahid, either, who's working with his community who've only had a writing system for about 10 years and that's because they invented one themselves. But it's still not very relevant for most of the community. I should say I share that student with Ian Hickie, so thank you to our work in Afghanistan.

I'll quickly move on to a personal experience I had recently, as I said, with the death of my husband. He was a systems engineer, a top systems engineer, an electronics engineer. He was Indigenous Irish. He struggled with that idea of being Indigenous and Irish, because the British also invaded Ireland about 600 years ago.

And in the last few months he said to me, "I think I'm dying from trauma" and I said, "Really?" and he said, "The cancer is caused by trauma." And I thought, gosh, he has had a tough life but … and I said, "Trauma?" and he said, "Yes, the English invading Ireland." Cancer in Ireland is really high. We're all really stressed about it, and I still remember him saying, when I first met him and he was aged 22, "That feckin Cromwell" and I'm, like, Cromwell — is that a band I've never heard of? And he meant Oliver Cromwell. So here's this 22-year-old Irish man talking about the atrocities committed on his people. It was that much still in his brain.

There's this kind of communal grief, like we have in Australia as Aboriginal people about the things that have happened to us and our communities. We suffer from these sorts of micro traumas constantly that lead to terrible disorders like PTSD. I've experienced that myself. And Pádraig struggling to articulate being Indigenous, because it was such a bad thing to be in Ireland: you were a Culchie. You know: they were still using those terms meaning an outsider, a non-person, a bad person, you know, for being Irish, Indigenous Irish, from the Gaeltacht, from the Irish-speaking areas.

But in the end his approach which, while he worked closely with Lighthouse — I have to say Ian Hickie intervened and helped me to get Michael Boer as Pádraig's doctor and Chris Milross, they worked with him. Like the system engineer he was, he treated his illness as a problem. "Mission critical," I think he would call it, because he dealt with extremely complex defence system matters and things. Mission critical is where it can't go down — the system can't go down — so his system was not to go down, not to go down until he took it down. And so he worked with his doctors in this clinical way.

What I was going to talk a bit about today was AI and how AI might engage with communicative systems. With Australian Indigenous languages, I do wonder how the complexity of our languages and the fact that they're not related to any other languages in the world will engage with AI. At the moment that's not happening — people have approached me about it and I think it would be an interesting thing to do.

Pádraig and I talked a lot about AI and where it was heading and he said, "Oh, there will be a humanlike brain that will develop in the not too distant future," and he had access to information that he felt very strongly that this is where we were heading — that you would have some way of creating something that could cognise in the way that humans did. And he held fast to this idea that technology and systems could actually carry us through into a future, and even carry him through what he was going through … systems. But in the end the system failed and the human stepped in. And it was his Indigeneity, my Indigeneity, his other friends, including Mujahid, who stepped in around him and wrapped around him and created the human environment, the empathetic, the caring, the randomly emotional, the things that no system can really replicate. I mean, it's actually a fact that everything everybody says is the first time anyone's ever said it, and it will never be said again. I know that sounds extraordinary, but that's how human language is.

But machines rely on replicating things that have been said and thought and experienced. They have massive databases that you can feed into AI systems. But they're always flawed. They're always a little bit blurred. There might be ten fingers on one hand instead of five — the other hand looks normal, but this one's just a bit weird. You know there's always that bit of weirdness.

Humans are a bit like that too. I saw that as Pádraig was failing, there were things shutting down about his cognition. But one thing he could never do was imagine his own death. No human can imagine what it is to be dead because we will never have that experience. Once you're dead, the brain is stopped. That's why they turn the machinery off. We can't share that experience. No one has ever shared what it is to be dead, and no one ever will. Humans live in this space of hope and imagination, a kind of world that Indigenous people populate with the "beyond the death."

In our "beyond the death" you become part of everything that ever was. That just sounds like good science, doesn't it? We say that people become part of the stars. We now know, thanks to Carl Sagan, that we are all stardust, one way or another. But we have said this. "Look up," my grandmother said to me, "look up when I'm gone and you will find me: that's the star, and when there's a shooting star, that's a person returning." Well, it's stardust, it's matter.

Where I would like to end is to say that there are other ways of thinking about the world and the human mind and that Indigenous people have a particularly different way of thinking about the world and the human mind. Every time I travel to another community, I find commonalities but I also find new and startlingly, interestingly different things about how people understand the world and then communicate it. I'd like to see more of that brought into our broader thinking as scientists, so that it is not such a euro-centric and Anglo- and dominant language-centric way of sharing scientific knowledge. Focusing on the kind of research that we do that focuses on these non-Indigenous ways of thinking.