Speech by Robert H. Wade on receipt of an honorary doctorate at the graduation ceremony of Victoria University of Wellington, 16 May 2023

We are living through an extraordinary revolution in which machines are coming to match the human ability to use language – machines are coming to match the human ability to use the very foundation of human society. I have not yet had much direct contact with ChatGPT. But even just reading about its exploits I have some empathy for the blacksmith back in 1908, bending over to repair a horseshoe, who looks up and sees the first Model T Ford coming down the road.

The effects are coming at us faster, more disruptively than the effects of the last tech revolution, the internet revolution of the early 1990s.

You will know that Geoffrey Hinton, known as the "godfather" of AI, recently resigned from Google to dedicate himself to warning about the "existential threat" posed by AI. He said in a recent interview, "The alarm bell I'm ringing has to do with the existential threat of them [AI algorithms] taking control. I used to think it was a long way off but now think it's serious and fairly soon." Recent generations of AI algorithms function at a level equivalent to a human intelligence of around 90-100, he says. He thinks the AI technology has the potential to surpass human intelligence – to go to the human IQ equivalent of 200-220 and become difficult for humans to keep under human control (Smith 2023; Harari 2023).

You will know, too, how AI is already beginning to affect education. From the point of view of teachers right now, as we speak, GPT is shaping how we govern and assess exams and essays. In March 2023 ChatGPT was harnessed to the Wolfram computer language plug-in, and given the British A-level exam in maths. It scored 96%, which would have placed it at the top of the national results distribution -- within seconds of starting!

What will be the effects on the labor market of the AI revolution (in developed countries, like New Zealand)? It is possible that the AI revolution will bring some real benefits in the labor market, by reducing a lot of the drudgery in workplace practices and reducing the

present high level of job polarization and income polarization. Polarization is much higher today than it was in 1980 or even as recently as 2000, and is a major cause of the "democratic recession" – the erosion of democratic institutions and norms – across much of the western world. We should be giving concentrated attention on how to reduce the current levels of income and wealth inequality in western societies.

The computer revolution that started four to five decades ago, followed by the internet revolution from the early 1990s, brought economic benefits mainly to the university-educated elite of professionals – "knowledge workers" like doctors, lawyers, engineers, Wall St executives, corporate managers, not forgetting university professors.

Meanwhile, as computers spread, many "middle skill" workers – able to live a middle-class lifestyle but without a university degree – lost their jobs to the computers, and were displaced downwards into "lower-skilled jobs" on lower incomes.

The labor market became more polarized, the middle class shrank.

Today the distribution of wealth in western societies is more unequal than it has been for well over a century. In New Zealand today the top 1% owns around 25% of the national wealth, as in Australia (Rashbrooke 2021). This sounds extreme; but it is mild compared to the US, where the top 1% owns more like 35% of the national wealth! It is amazing that American society is as "calm" as it is, in the face of such gross inequality.

People who found themselves left behind, on lower and more insecure incomes (zero hours contracts, for example), have tended to become angry, depressed, fearful, resentful, and ashamed. Polling evidence on people's "life satisfaction" shows a big increase in the share of national populations – not only western populations – feeling dissatisfied with their lives, especially over the past decade or so. The CEO of Gallup polling organization Jon Clifton recently published a book titled: *Blind Spot: The Global Rise of Unhappiness and How Leaders Missed It.*

Rising levels of unhappiness go with the rising frequency of social and health dysfunctions reported by analysts such as Richard Wilkinson and Kate Pickett (*The Spirit Level*), and Anne Case and Angus Deaton (*Deaths of Despair*).

Would-be political leaders see that the path to power is to manipulate the emotions of their ill-informed electorates, presenting themselves as Saviors who rail against elites and promise to shut the borders and "make the country great again". This is the story behind Trump, Boris Johnson, Brexit, and the political polarisation and partisanship in most western societies.

But as I suggested earlier, there is potential good news. The AI tech revolution could bring larger economic benefits to lower-skilled people than to the college-educated elite, and thereby help to re-build the middle class. There is already some empirical evidence that lower-skilled people can benefit hugely – more than high-skilled university graduates – by using GPT to, for example, summarize literature on a certain topic, to write a coherent document, do medical analysis, write legal briefs, maybe even fly planes! All this without needing a university degree (Rosalsky 2023).

That in turn may help to reduce the level of income and wealth inequality and the degree of political polarization, and (hopefully) make democratic institutions work better – especially if western democracies add citizens' assemblies or juries to existing institutions, to advise on contentious issues (such as carbon taxation, nuclear power; immigration; Brexit).

But by same token, if AI in the labor market benefits those without a university degree relatively more than those with a university degree, that implies a devaluation of the superior expertise of university graduates over time, and you may lose some of your income and work advantages relative to the rest of the population. You may well not like that. But the society may become more harmonious! That is potential good news.

However, if and when the engineering difficulties of deploying quantum computing at scale have been solved, the harnessing of quantum computing's unlimited processing power to more efficient learning algorithms (learning at the human IQ equivalent of 200 or more) will

probably cause far more job displacement across the whole labor market than what is in prospect from AI linked to our current computing based on semiconductors, which are constrained to represent information as a series of 1s and 0s. A recent overview paper said, "If the various projects being pursued around the world succeed, these [quantum] machines will be immensely powerful, performing tasks in seconds that would take conventional computers millions of years to conduct" (Wadhwa, 2022). The AI plus QC combination may be wonderful in terms of the development of new materials and drugs and goodness knows what we cannot even yet imagine. But it may also bring on Geoffrey Hinton's "existential threat" to human civilization and the biosphere.

Let me end by coming back to New Zealand. I urge you, as new graduates, to read Max Harris' excellent *The New Zealand Project*.

REFERENCES

Case, A. and A. Deaton, 2020, *Deaths of Despair and the Future of Capitalism*

Clifton, J. 2022, *Blind Spot: The Global Rise of Unhappiness and How Leaders Missed It.*

Harari, Y. 2023, https://www.youtube.com/watch?v=LWiM-LuRe6w

Harris, M. 2017, *The New Zealand Project*

Rosalsky, G. 2023, What if AI could rebuild the middle class? May 9, https://www.npr.org/sections/money/2023/05/09/1174933574/what-if-ai-could-rebuild-the-middle-class

Rashbrooke, M. 2021, *Too Much Money: How Wealth Disparities are Unbalancing Aotearoa New Zealand.*

Smith, C. 2023 "'Godfather of AI' quits Google amid ominous warnings about AI's 'existential threat'", *Forbes*, May 5

Wadhwa, V. 2022, "Why quantum computing is even more dangerous than artificial intelligence", *Foreign Policy*, August 21

Wilkinson, R. and K. Pickett, 2009, *The Spirit Level: Why More Equal Societies Almost Always Do Better.*