

Who's afraid of the big, bad robots?

Artificial intelligence is transforming the employment landscape. So we must adapt our skills to exploit technology to the full, argues **Lynda Gratton**

Illustration / Robin Boyden

The pace of technological innovation is breathtaking. It is having an impact on virtually every aspect of our lives. And it will continue to do so – in many ways that we can't yet imagine.

Late last year I found myself gazing down quite affectionately at a robot at the entrance to a Softbank store in Tokyo. The size of a child, it had angled its head towards me and was using its articulated hands to gesture as it chattered away. As I bent down to gaze into its eyes, I was enchanted.

I'm impressed (if not as enchanted) with my recently bought car. Habitually the buyer of vintage (or what my children would call 'old') cars, I've leapt a division to a car capable of parking itself. I'm now the owner of a mass-market vehicle that has the inbuilt intelligence to manoeuvre itself gently into a space by the kerb.

The striking point is not that there is such a thing as a retail robot or a self-parking car: such technologies are likely to become run-of-the-mill in a relatively short period of time.

What is of far greater significance is that just a few years ago, I wouldn't have predicted that I would feel such affection for a little robot, or own a vehicle quite so clever.

We must all expect the unexpected

Nowhere is this more true than in the sphere of work. When I launched the Future of Work research consortium seven years ago, my interest was in how work would change. I got in touch with executives in more than 100 companies across the world to discover their thinking on technological innovations and the rate at which they are adopted.

It is clear to me that never before has there been a greater need to be adaptable. To survive and prosper, we must be nimble and be prepared for a working world not yet imagined.

An unknown future

At the World Economic Forum at Davos in 2015, I moderated a conversation with some of the world's leading artificial intelligence (AI) experts. It was a fascinating conversation that was reported in *The Daily Telegraph* the following day under the 'robots-destroy-jobs' theme. Two years later, it is no surprise that many people are anxious

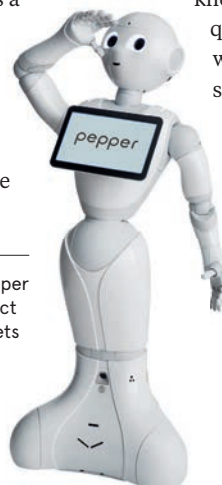
about the likely impact that AI and robotics will have on their jobs: indeed, will their jobs be automated out of existence? The repercussions have already been felt by many people in medium-skilled jobs. When was the last time you went into a bank to cash a cheque, watching while the teller counted out notes? How soon will it be before you, like me, will be enchanted by a diminutive robot in your local bank?

When my co-author Professor Andrew Scott and I wrote *The 100-year Life*, it became clear to us that while increasing longevity meant significantly longer working lives, the real challenge is that longer working lives are coming at a time of significant technological innovation and change. The result is that we are trying to make investments and plans about a future working life that frankly we

know little about. Look at the questions we face when we believe we face an unknowable future: What skills should I invest in developing? What jobs should I prepare for?

But is the future really so unknowable? Perhaps the long term – more than 10 years – is impossible to imagine, but there are signals that can help us think about the short and medium term. »

Soft sell: Humanoid robots like Pepper at a Tokyo Softbank store can attract greater footfall to high-street outlets





Learning to live with robots

One signal to look at is where the investment money is going. Driverless cars are an obvious and high-profile example: significant resources and effort are currently being put into the development of autonomous vehicles that are reliable, efficient and safe. If all that research pays off, we can imagine the effect on jobs. Clearly the impact on lorry drivers will be profound: a large cohort of relatively low-skilled, mainly male employees will be displaced.

A second signal is how people feel about these technological innovations and how quickly companies are prepared to adopt them. Perhaps the more we interact with robots, for example, the more comfortable we will feel about having them care for us when we are older. That positive interaction I had in Tokyo with the cute Softbank robot could well be the beginning of my changing attitude to robots. This is important because our feelings about technologies will affect the rate at which those new technologies diffuse through our organisations and society.

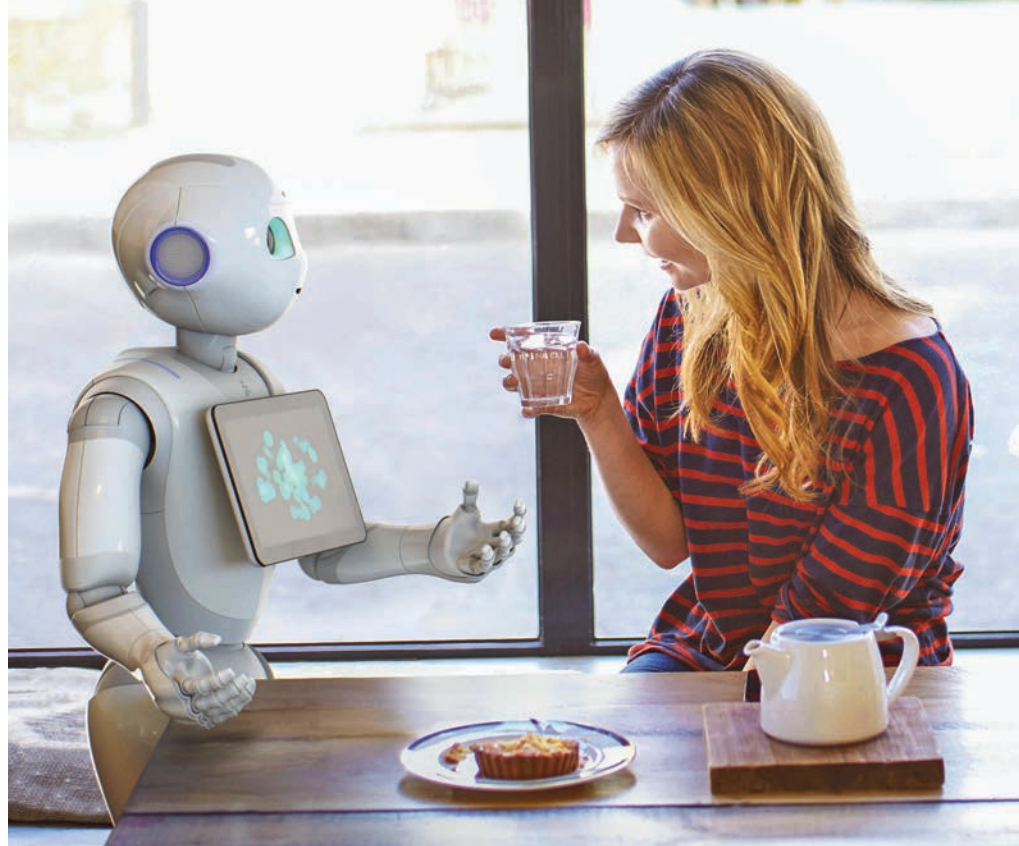
For companies, the diffusion rate will also be a function of the cost of labour: it makes more sense to invest in AI and robots if hourly wage rates are £25 than it does if they are £10.

However, even with these clues, accurately predicting scale and speed is hard. Sometimes we under-predict the rate of diffusion of certain technologies. Think about smart phones, which were virtually unknown two decades ago but which we now take for granted. We can also over-predict the speed at which other technologies will appear in our lives: I don't think you will see robots with arms and legs whirring down the corridor outside your office in the short or medium term. Will C-3PO step off the screen of *Star Wars* and invade our lives? Not for a while.

As we plan for the future, we are confronted by a number of imponderables about both scale and velocity. So what do we know?

Hollowing out

We know that AI and robotics have already had an impact on work – particularly medium-skilled jobs. This has resulted in a phenomenon termed the 'hollowing out of work'. Many of the jobs that have been



replaced by technology were those requiring medium levels of skill, such as working in a bank or on a factory floor, for example.

Looking ahead, it is clear that these technologies are now impacting on the extremities of the skills spectrum – on both low and high-skill work.

The effects of this widening impact on the skills spectrum could be profound. Right now in the UK, for example, around 45 per cent of jobs are categorised as low-skilled. And at the high-skill end, expect change: human activities such as diagnostics, analysis of complex data and even surgical procedures are all areas where developments in technology are already under way that could change how people work.

That is why commentators such as Andy Haldane, Bank of England chief economist, has said he believes that up to 15 million jobs in the UK could be replaced by automation: "Technology

appears to be resulting in faster, wider and deeper degrees of hollowing-out than in the past."

But technology does not simply replace work. It can also create the opportunity for new types of work to flourish. As Bank of England governor Mark Carney notes: "Every technological revolution mercilessly destroys both jobs and livelihoods... well before the new ones emerge."

The question is: What are these new jobs? Certainly there has already been a significant increase in 'digital jobs' – ones requiring high social skills or high cognitive skills or a mixture of both – that exploit the output of new technologies rather than working within those technologies.

Look at areas such as app development, data mining and digital marketing specialists for an idea of what these jobs could be. Yet it is important to realise that while the percentage increase in these job types has been significant and will undoubtedly continue, the numbers aren't huge in terms of total employment.

Adapting to change

So, given all we currently know and what we know we don't know, how do we prepare for this unknown future? This is the question I put to my second-year MBA elective class focused on 'the



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Automatic transmission: Nissan's driverless car and robot characters from *Star Wars* herald a future in which many routine tasks and skills will not require human agency



'Technology does not simply replace work. It can also create the opportunity for new types of work to flourish'

future of work'. Here are the three pieces of advice I give to my students:

- First, each of us has to understand and accept that our working lives will change over time. The exact nature of that change cannot be predicted, so we have to be open to the idea of continual adaptation.
- Second, in preparing for this unknown future, we must focus on flexibility and learning. As we live longer and working lives are likely to extend, we will feel the impact of more and more disruptions from the adoption of AI and robotics. That means we need to allow time to learn more and learn flexibly – over an entire working lifetime. This is one area where technology itself can be a real boon. Increasingly, we will engage in technologically-enabled learning that can be accessed online and in bite-sized chunks to help adapt to an evolving employment environment.
- Third, we will also have to accept the possibility that we will need to step back from our day-to-day routine and take time out to learn new skills – setting aside several weeks a year or a couple of months every decade to arm ourselves with the

16,000 UK staff. It has presented them with a blunt question: Could a robot do your job better than you? Those who answer 'yes' are not then handed their P45; instead they will be retrained for a new role.

A narrative will also emerge about those employed in low-skill work. The government will need to ask how those made redundant from low-skill jobs can be retrained to take on new roles where humans perform better than machines (the issue to which Andy Haldane alludes.)

Take, for example, the large number of redundant truck drivers replaced in the medium or long term by driverless cars. Will they segue into jobs requiring a real human touch? Will these truck drivers become hairdressers or waiters? We know from the experience in Detroit that, when car plants shut down, some men from manual jobs lacked transferable skills and struggled to find new employment.

This is a key issue: as former US Treasury Secretary Larry Summers has pointed out, it is often hard for men to make the shift from traditional manual occupations into jobs which are usually regarded as more

feminine. Much will need to be done to create possible pathways to new jobs and to support the training bridges that connect the old with the new.

Building a job

In part, these whole-scale skill shifts will be eased by technological innovations. For example, there is a growing body of internet platforms that match freelancers with businesses that need a particular task performed. There is also the promise of platforms creating opportunities for people to build their own businesses, tapping into a potentially global market of suppliers and customers.

So, rather than simply finding a job, perhaps the new mantra will be building a job. Of course, there is no doubt that this requires lateral thinking, flexibility and imagination.

I'd also expect a narrative to emerge around creativity and innovation. In theory at least, new technologies will take away some of the drudgery of our working lives and liberate us to concentrate on creativity and innovation.

Indeed, it's worth noting that in the UK there is a growing strength in creative areas: in the second half of last year, British film, TV and music production increased its output by 12 per cent. These are not themselves technology industries, but they exploit technology to achieve their creative ends.

As individuals, as organisations and as a society, we have to acknowledge that continuous innovations in technology will have huge consequences on working lives. But we are not simply passive observers: C-3PO is not our master. It is up to all of us to exploit technology, rather than allow technology to determine the narrative.

There is no doubt that some jobs will disappear and some rungs in traditional career ladders will vanish. We must accept that. We will have to adapt – moving from one notional ladder to another over our working life, or even building a new ladder that we and others can climb.

New employment opportunities will emerge. It simply requires us to be sufficiently fleet of foot – anticipating, adapting, learning – to grasp the full potential of technology and make the most of this extraordinary era of innovation and longevity we are living through. o

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