

Deconstructing the robot job 'threat'

Studies indicate that such a feeling is grounded more in perception rather than objective proof but this does not make unemployment fears any less real or valid.

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At the Henn Na Hotel in southern Japan's Huis Ten Bosch theme park, guests can check in with either a human-like robot receptionist or one in the form of a velociraptor. PHOTO: HUISTEN BOSCH

AT THE Henn Na Hotel in southern Japan's Huis Ten Bosch theme park, guests can check in with either a human-like robot receptionist or one in the form of a velociraptor.

In almost all cases - well over 90 per cent of the time - guests opt for the dinosaur.

The Henn Na chain promotes itself as being the first hotel group in the world almost entirely staffed by robots. A few human staff are on hand to help oversee cleaning operations or intervene when things go wrong, but most visitors will go their entire stay without ever encountering one.

As technology rapidly advances, robots are moving from a behind-the-scenes presence to taking a more frontline role in business interactions, especially in the service sector.

In my work researching organisational psychology at NUS Business School, the robot-staffed hotels in the Henn Na chain provide an illuminating case study of human-robot contact and how willing we are as customers and employees to accept these interactions.

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Managers and human staff at the chain tell me they find robots are better and faster at certain tasks, such as retrieving information or performing calculations, and they enjoy working with them. It's also clear that interacting with robots is one of the primary draws for guests choosing the hotel.

GROWING ANXIETY

So why then do guests prefer the dinosaur receptionist to the one in human form?

Part of the reason may be found in the so-called "uncanny valley" theory, first put forward by Japanese researcher and robotics professor Masahiro Mori in the 1970s.

Put simply, the theory says that we react positively to robots with physical features that are familiar to humans, but push that a little further - close to, but not quite, human - and then they become disturbing, creepy and untrustworthy. This is the dip in the valley.

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Another factor that likely plays a significant role is novelty - after all, it's not every day you get to have a chat with a dinosaur.

Yet, there are also likely to be other influences at play too, such as culture. This may be especially important when it comes to understanding why the Japanese in particular seem to welcome engaging with robots more than others.

For example, several studies have noted the contrast between how robots are portrayed in Japanese culture compared to the West. Japanese anime cartoons overwhelmingly portray robots as benevolent and helpful superheroes, while Hollywood movies tend to show them as villainous, rampaging Terminator-style machines.

Understanding the many factors that influence how we respond to encounters with robots is important because preparing for an increasingly automated world will be essential to future business success. Such awareness will help developers shape both how robots appear physically and how they communicate with us as customers and as colleagues.

While robots have been used for years to carry out routine and repetitive tasks, for example on production lines, advances in technology, especially Artificial Intelligence (AI), mean that robots are now able to take on a growing number of roles working alongside human employees or replacing them entirely.

However, because of this, there is also growing anxiety in many quarters that robots will take over, eliminating entire categories of jobs and forcing people out of work.

With this in mind, businesses need to understand how robots will be received by customers - for example, will they trust them? And they need to prepare their employees and organisations to adapt to the fundamental changes in working practices that robots will bring.

For many workers, the critical question is what form these changes will take.

One recent report by analysis firm Oxford Economics forecast that up to 20 million manufacturing jobs could be taken over by robots by 2030.

Another report by the same firm estimated that 47 per cent of total employment in the US is at risk of automation. This study has even produced a website, willrobotstakemyjob.com, which provides an instant assessment of how likely various jobs will be automated in the near future.

Perhaps understandably, many workers feel threatened as a result, even if the presence of robots brings with it benefits like improved safety or helping them to complete tasks more quickly. So what evidence is there that these feelings are justified?

In my own ongoing research into this area, I have sought to place employee reactions to the growth of automation in context.

In one study in the US for example, I found that metropolitan areas that have seen the highest rates of automation were also the areas with the highest rates of online job searches - an indication of anxiety about job security. However, I also found there to be no association between areas with increased automation and high levels of unemployment.

DEFINING FEATURE

In another study in India, I found that skilled engineers - a group who are not forecast to be replaced by robots - nonetheless felt threatened by working alongside them. As a result, they reported higher feelings of job insecurity and were more likely to experience burnout.

These findings suggest that the feeling of the robot "threat", at least among those in the study, is grounded more in perception rather than objective evidence of robots replacing workers. But that does not make their fear of job loss any less real or valid.

Understanding the psychology behind this has important implications for employee motivation and overall organisational productivity. Yet, these factors are often overlooked by companies that tend only to focus on the gains to be had from employing robots. A potential risk is that one may counteract the other, with demotivation among human employees wiping out gains derived from automation.

The growing presence of robots - both physical and virtual - is set to be a defining feature of the next decade and beyond. At the business level, however, what remains to be determined is how successful this transformation will be.

That will depend on expanding our understanding of how humans respond to and engage with robots, and the many psychological factors that shape this response.

As this brave new world rapidly evolves, the challenge for all of us - governments, business leaders, workers and educators - will be to come up with solutions and skills that help us adapt to it.

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