

## **Robots: stealing our jobs or solving labour shortages?**

Martin Forbes Abridged from *The Observer* October 2<sup>nd</sup> 2021

§1 While overall unemployment rates remain elevated, both the US and the UK are experiencing widespread worker shortages, focused especially in those occupations that tend to offer gruelling work conditions and relatively low pay.

§2 All of this has created a powerful incentive for businesses to invest in automation as a way to adapt to the worker shortage.

§3 There can be no doubt that the pandemic and the associated worker shortage are accelerating the drive toward deploying artificial intelligence, robotics and other forms of automation. In the UK, the trend is being further amplified as Brexit's impact on the workforce becomes evident. However, the reality is that most of these technologies are unlikely to arrive in time to offer a solution to the immediate challenges faced by employers.

§4 While a number of startup companies in Silicon Valley and elsewhere are working on self-driving trucks, the technology remains several years away from commercial viability. Add time for governments to craft the necessary regulations or simply to get the public to accept the idea of fully loaded trucks navigating local roads without a driver at the wheel and the wait could easily be much longer.

§5 Over the course of a decade or more, however, the overall impact of artificial intelligence and robotics on the job market is likely to be significant and in some specific areas the technologies may lead to dramatic change within the next few years. And many workers will soon confront the reality that the encroachment of automation technology will not be limited to the often low-paying and less desirable occupations where worker shortages are currently concentrated. Indeed, many of the jobs that employers are struggling to fill may prove to be highly resistant to automation. At the same time, better-paying positions that workers definitely want to retain will be squarely in the sights as AI and robotics continue their relentless advance.

§6 More educated white-collar workers will quickly discover that they are by no means exempt from the rise of AI. Any job that involves the relatively routine analysis or manipulation of information is likely to fall to software automation. Some of the world's largest media organisations, for example, already use AI systems that automatically generate news articles, while intelligent legal algorithms analyse contracts and predict the outcome of litigation. AI is even beginning to demonstrate a talent for routine computer programming. In many cases, knowledge work will prove to be easier and less expensive to automate than lower-paid work that requires physical manipulation. When the job is focused purely on working with information, there is no requirement for an expensive mechanical robot and no need to surmount the difficult technical challenges involved in replicating human dexterity or mobility.

§7 As advancing technology shapes our future, the workforce will increasingly be divided into winners and losers. The losers will be those who focus largely on routine, predictable tasks, regardless of whether these activities are physical or intellectual in nature, and often independent of educational level. The winners are likely to fall into one of three general groups. First, skilled trade workers, such as plumbers and electricians, who do work that requires dexterity, mobility and problem-solving ability in highly unpredictable settings. The same is true for a care worker who assists an elderly person with his or her daily needs. This type of work is far beyond the capability of any existing robot and these jobs will remain safe for the foreseeable future. Second, those workers whose occupations require the development of deep, sophisticated relationships with other people will be relatively safe. This might include nursing, or business or educational occupations that require complex human interactions. While AI is making progress in this arena, it is likely to be a long time before machines can form truly meaningful relationships with humans. The final category includes intellectual work that is creative or activities that are non-routine and unpredictable in nature. For these workers, artificial intelligence will be likely to amplify, rather than replace, their efforts. Within many professions, a winner-take-all scenario might unfold; the most creative individuals will rise to the top, while those focused on more routine activities will face a growing threat from automation.

§8 The best advice for individuals is to transition from routine, predictable work and towards one of these winning categories. There are real questions, however, about the viability of this advice when applied to society as a whole. Historically, advancing technology has tended to drive most workers from routine work in one sector to routine work in another. As agriculture became mechanised, workers moved from farms to factories, but they continued to do routine work. Later, workers moved to routine jobs in the service sector. The rise of artificial intelligence will require an unprecedented transition in which a large fraction of the workforce will have to find and adapt to roles that are genuinely non-routine. Many workers will probably lack the inherent talents and personality traits required to take on creative or relationship-based roles.

§9 Designing a society that can adapt to the rise of artificial intelligence and allow everyone to thrive as these changes unfold will be one of our most significant challenges in the coming years. It will require an emphasis on retraining and education for those workers who can realistically undertake the necessary transition, as well as an improved safety net for those who will inevitably be left behind.