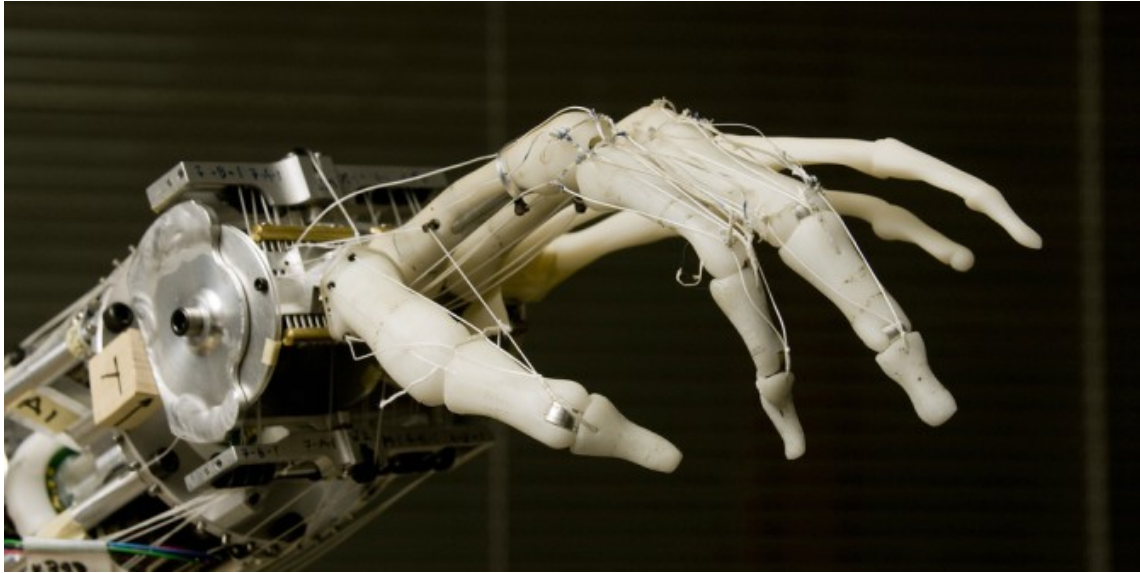


The impact of the technical revolution on our well-being



At the recent XXI World Congress on Safety and Health in Singapore, Hans-Horst Konkolewsky, Secretary General of the International Social Security Association (ISSA), asked a large audience of international leaders and safety practitioners whether the fourth industrial revolution, largely driven by digital technology, will be good or bad for worker's health and safety.

Overwhelmingly the answer that came back was that the changing world of work will be ultimately good for our health and well-being. However, there will be many challenges to navigate, and risks to understand and control, particularly in the field of well-being.

What is the nature of these changes? A new [literature review](#) by the British Safety Council examines the state of research about the changing world of work and the associated risks. The review confirms that people are living and also working for longer. Many tasks are being automated; modern communication technologies are dissolving the work/home divide. New materials like nanotechnology (including tiny air-borne waste products that can damage our health) and new technologies can present new risks. So does an increasing use of more 'flexible' employee contracts.

Digital economy

The economic advantages of the digital economy will mean that the changes we perceive today will continue to accelerate. Algorithms can now provide relevant data that increase production capacity by [20 per cent](#) as well as determine which [factors](#) affect service and production quality. Intelligent machines reduce wasted time and materials, as well as optimising accuracy and workflow.

The Internet of Things (IoT) is another driver of digitisation, with more than [\\$178 billion](#) spent on it in 2016. The IoT creates advantages, such as providing real-time feedback and alerting companies of defects or damaged goods and helping them more effectively respond to customer demands.

A further element is the increasing use of robotics. Not a new development, but in combination with 'intelligent machine' advances, robots are capable of mimicking human traits such as dexterity and memory, which makes them more useful in industries like manufacturing. Again, much of the advantage is around efficiency.

Well-being

Some of these technological developments will be beneficial – perhaps narrowly – for instance, [autonomous dump trucks](#) used at mining sites can be remotely controlled by operators, eliminating the need for human drivers and their close exposure to dust. Also, with greater use of technology, particularly smart phones, there are opportunities for more flexible work that can boost people’s sense of control over their work, a key component of mental well-being.

The spectre of automation is, of course, at the heart of many of these discussions. Research by [IPPR](#) says that 10 million jobs are at risk from automation in the UK. When those health and safety practitioners were asked the question about the future risks of work, the health advantages of automating certain hazardous processes (for example the increasing use of automated riveting or 3D printing) – and by implication the removal of people from exposure to the associated risks – was uppermost in their minds. There are also health benefits of these modern, flexible ways of working where people are adding specific value to automated processes. But unemployment and the loss of self and social worth is known to be very damaging to health.

Besides, a simple calculation of increasing automation may not fully reflect what will happen, as we are already seeing counter-trends of people being re-introduced into the workplace because of the recognition of the benefits of personal, human labour. It is far more likely that people and intelligent machines will increasingly become ‘colleagues’ in the future. A colleague who can work without breaks, who is always ‘on,’ who isn’t going to share much ‘social’ information, is a very different colleague; a relationship that could easily create stress and undermine well-being.

There are, of course, more pernicious mental and physical well-being risks on the horizon. The same information technologies can make people continually connected and over-engaged in work and lead to fatigue and exhaustion. With the workplace safety regulator HSE estimating that some 60-80 per cent of accidents are related to fatigue and poor judgement, the safety risks are plain to see. Working with robots who do not need to chat, socialise or take a break carries risks of exhaustion and burnout, particularly in a context of an ever-greater drive for efficiency.

Automation may increase inequality – at least in the next 20 years – and there will be many less skilled workers who will not share the benefits. In many ways, the rise of non-traditional contracts (such as zero-hours contract) or the gig/platform economy is only made possible by certain digital tools. While giving people more flexibility, they can dilute the ‘psychological contact’ between the worker and employer, undermining both job fulfilment and job commitment. Digital technology can also enable spaces for ‘domestic’ [manufacture](#) than can be used to evade the normal regulatory oversight of such work. People can be plugged into manufacturing processes that are informal and not receive the minimum wage or protections to their health, safety or well-being.

We also know that people at work derive important health benefits from the social nature of work and this will be an issue to address in the future. As individuals, we will be staying in work for longer and, given the importance of work for well-being, that can be a positive development. Evidence tells us that the health benefits of ‘good’ work, whether we define this in terms of good employment practices, reward and recognition or fulfilling jobs, can be either enhanced or undermined by disruptive technologies.

Mitigating risks

Though change is inevitable, how we should and will respond to the changing world of work is not obvious. Government, businesses and the educational system need to make sure that they have the right policies to ensure that work enhances well-being and not undermines it.

Government needs to look at incentives (such as tax breaks) for employers to introduce health and well-being programmes. Employers should test innovative approaches and well-being programmes in consultation with workers and trade unions. The ability of workers to cope with the mental pressure of a changing world of work is going to be a key attribute in the future. Schools and training bodies, including those for safety professionals, need to focus on both ‘soft-skills’ such as collaboration, creativity and leadership (which are transferable and less prone to automation) and skills associated with new technology, such as working in collaboration with intelligent machines and robots.

Change seems to be inevitable, we need to start planning for it today if we are going to be healthier and happier tomorrow.



Notes:

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Lawrence Waterman OBE CFIOSH is the Chairman of the British Safety Council and a founding partner at the Park Health and Safety Partnership. He was formerly head of health and safety for the London Olympic Delivery Authority. He is the past president of IOSH. Lawrence is also a visiting professor at Loughborough University, where he both teaches and participates in research. He was appointed OBE for services to health and safety in the Queen's Diamond Jubilee Honours.