

AI and work: real issues and myths

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Harry Collins, *Artificial Intelligence, Against Humanity's Surrender to Computers*, Polity 2018

Labour Party, *The Future of Work Report* for the Labour Future of Work Commission, 2018

Harry Collins is a sociologist of science. His studies have ranged from lab technicians to scientists searching for gravity waves. His carefully considered conclusions - and particularly the polemical subtitle of this his latest book - are therefore of relevance to teachers in further and higher adult continuing education and training when supercomputers are busy 'deep learning' all by themselves to become Artificial Intelligences. What, then, is the point of anybody studying or teaching anything? Let alone becoming expert in what we teach?

For expertise is the other side of Collins's interest - gravity wave detectors being the community of scientists with whom he has worked most closely to understand if not fully participate in their activities. These involve crunching huge amounts of digital data, similar to the 'brute force' number crunching that is reducing expert professionals to para-professionals, undermining the rationale for higher education in traditional middle-class professions like medicine and law. The same proletarianising logic was followed by computer-control over formerly skilled trades, reducing them to the competent performance of itemised tasks by interchangeable operatives.

This latest application of smart machines threatens to put everyone out of work - including those who deploy them, as profit-maximising algorithms obviate their capitalist owners. This leads to the weird prediction of a new class struggle in which humanity is ranged against its machines. Such predictions are endorsed by experts as eminent as Stephen Hawking - but why didn't he stick to his expertise?, asks Collins, as even the community of gravity wave detectors do not presume to pronounce upon Black Holes, what

though they are the source of the waves they seek. Fantasy futures like this would only make us 'the slaves of stupid computers', says Collins.

For, as he points out, the bar to Artificial Intelligence is not high: passing the famous Turing Test to see whether a computer can successfully mimic a man pretending to be a woman (an unnecessary and possibly perverse double-blind is surely involved here!) the machine has merely to speak the language in which it operates with the same facility as any other native speaker. Just as Evelyn Waugh (was it?) noted with surprise how well even young children in France spoke French (fluency in one's mother tongue being what Collins calls an 'ubiquitous expertise' - though in non-Francophone countries familiarity with French is considered a specialist one), the computer would have to be brought up, or otherwise enculturated, in the society to speak its language as well as a native speaker. Since computers are not fully embodied humans, 'the central claim' of Collins's book is that this is impossible. In this sense the bar to AI is high and no disembodied machine is likely to pass it.

Only misinterpreting 'intelligence' to mean retaining and then regurgitating appropriate bits of information in response to not necessarily connected questions of both general and more specialised knowledge (rather like *University Challenge*) would meet the claim to have created AI. This should not be confused with the abilities of computers to outperform humans at complex but bounded activities such as chess or Go! These are more akin to the appropriation of skills by computers ('tapping the gold in the worker's brain', as it was called in Japan) from craftspeople. They do not indicate the general intellect that deep learning machines will supposedly absorb by trawling the expanding internet to acquire informational omniscience (leaving aside - which Collins does not but explains at length - how they are told to seek for and categorise appropriate 'bits' of data).

This exercise will not result in AI with a General Intellect that 'autonomist Marxists' imagined could

be shared by a new 'multitude'. What it can do within more bounded fields is produce the apparently super-intellectual feats of diagnosis and identification that are reliably more accurate than the previous predictions of experts, such as radiographers for instance. Nevertheless, the pattern-matching powers of machines are welcomed as accessories to otherwise often tedious laboratory tasks, as long as the human expert remains in control. This is the principle of human-centred technology which Mike Cooley spelt out in the 1980s.

As Cooley's *Architect or Bee?* quoted Marx: 'A bee puts to shame many an architect in the construction of its cells, but what distinguishes the worst of architects from the best of bees is that architects construct in their imaginations what they will ultimately create in reality' and imagination is another thing that computers lack, along with bodies! As Collins points out, this limits their ability to deal with uncertainty, fault-finding to repair errors being a characteristic of human interaction that is evident in conversation - save in a Turing Test with a computer mimic!

Intentions are therefore crucial, even if they are not explicit but part of what Michael Polanyi called *The Tacit Dimension* surrounding focal awareness of our actions. If this is lost so is control as skilful and knowledgeable expertise - whether craft and/or professional - is degraded to competent performance and the regurgitation of disconnected bits of information. Human-centred activities are thus reduced from quality to quantity by the behavioural monitoring of the machine. This has gone beyond the deskilling of industrial craft in the 1980s to the current disintegration of professional knowledge. As a result, the non-manual middle class is following skilled manual workers into an individualised and insecure mass service economy of fungible labour.

If trade unions and educators are going to address how to reduce the loss of skilful and knowledgeable expertise in the application of digital technology and artificial intelligence they will need to understand much more about digital technology, how work is changing and what is expected in future. Only with this expertise will they be able to influence the process of change.

As a starting point, the Labour Party has recently set up a 'Future of Work Commission' with a report that argues for the importance of work and a strategy to improve the quality of work. It states 'Good work is part of people's identities. It enriches our lives, and enables us to be fuller and better citizens. It reminds us that we - as individuals, communities and a society - build our own future'. A focus on such good work has to inform the application of new technology. A member of the Commission, John Evans, states, 'We must build a future where technology is used to

enhance workers, not replace them.'

The 'Future of Work Commission' defines five principles of good work. It should have value, dignity, security, autonomy and be available to everyone. The principle of autonomy is where Collins can contribute most to an understanding of the future and the development of arguments about the benefits and limits of artificial intelligence. Workers work best when enabled to use their imagination and creativity but many applications of new technology in the workplace undermine the capacity of workers to make their own judgements within the labour process and reduce their voice in the workplace. For instance, the application of digital technology to intensify Fordist monitoring of movement and work activities undermines any sense of autonomy or discretion.

A recent report from the European Foundation for the Study of Living and Working Conditions, *Automation, digitalisation and platforms: Implications for work and employment*, found that there are different elements to automation which are often treated as one. Automation can mean robots, or robots and software combined, or Artificial Intelligence tools. The implications for workers are that some or all of their work can now be done with much less input from them. However, there is a lack of research into the extent of the effects on workers of these changes, but as the pace of change increases this will become increasingly important. Trade unions are only now beginning to survey their members.

So, how to challenge the use of digital technology and AI so that it is used to develop good jobs? The *Future of Work* report argues for a much more nuanced debate about the impact and potential of digital technology and how to develop jobs which are productive and high quality. Collins can be used to understand the limits to the existing levels of AI and to identify areas where workers will be needed to bridge the processes of data gathering and analysis with an explanation to service users. A computer may be more accurate in interpreting medical scans but this does not reduce the need to have someone to explain the implications of a diagnosis and potential treatment options to a patient. Examples like this can be used to argue against a future scenario where workers become completely redundant, and Collins provides succinct support for this view. His work needs to be made more widely available.

One question in relation to digital technology is whether there is a significant difference between the current situation compared with earlier technological changes that increased the productivity of workers and created new jobs in other sectors and activities. Collins does not really make this clear as in this

book he does not engage with the Labour Process debate of the 1980s which Cooley took forward from Harry Braverman's 1974 *Labour and Monopoly Capital*. However, Collins contributes to an understanding of the nature of digital technology today through his analysis of six levels of artificial intelligence which range from Level I - engineered intelligence controlling a washing machine or car - to Levels V and VI which would include human-like computers that have not yet been invented. This helps make the debate more specific.

The *Future of Work* report recommends the creation of a Standing Commission on Ethics and Technology which would examine some of the most difficult ethical and social implications of new technology with recommendations for regulation. The recent exposure of Cambridge Analytica and its use of Facebook data has shown that establishing systems of digital accountability to deal with existing corporate providers has to be part of taking public control of digital technology. This would include algorithmic accountability. The *Future of Work* report also recommends that the Equality Act should include a right to 'understand the basis for algorithmic decision-making and to prohibit discrimination by algorithms'. One of the shortcomings of Collins shared by many other writers on digital technology is that their analysis lacks any perspective on gender, race and class. There is growing evidence, for instance, that algorithms are invariably developed from an educated, white, male perspective.

How can educators start to play a role in this process of change? With greater understanding of the scope and limits of current digital technology/AI, they can identify the education and skills needed to deal with the implications of this technological change. However, this depends on a wider approach to education and training that does more than simply train people to do new jobs but helps them to engage in a process of technological change which is more transparent and which works for the benefit of society not corporate profits.

The *Future of Work* report recommends that there should be a wider debate about the ethics, value and exploitation of data, which would cover the use, ownership and protection of personal data in the workplace. This depends on how data is currently collected and how algorithms are used. Only with this knowledge can any form of public control of data be achieved. Educators have a major part to play in this process.

At the same time they also have many questions to answer, not least of which is to recognise the inappropriateness of contemporary schooling. Instead of dividing students from apprentices, as in Labour's endorsement of the current T-line proposals

for technical training, a general education needs to be developed to prepare people to become 'fully developed individuals, fit for a variety of labours, ready to face any change of production, and to whom the different social functions they perform are but so many modes of giving free scope to their own natural and acquired powers' (Marx, *Capital* 1).

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