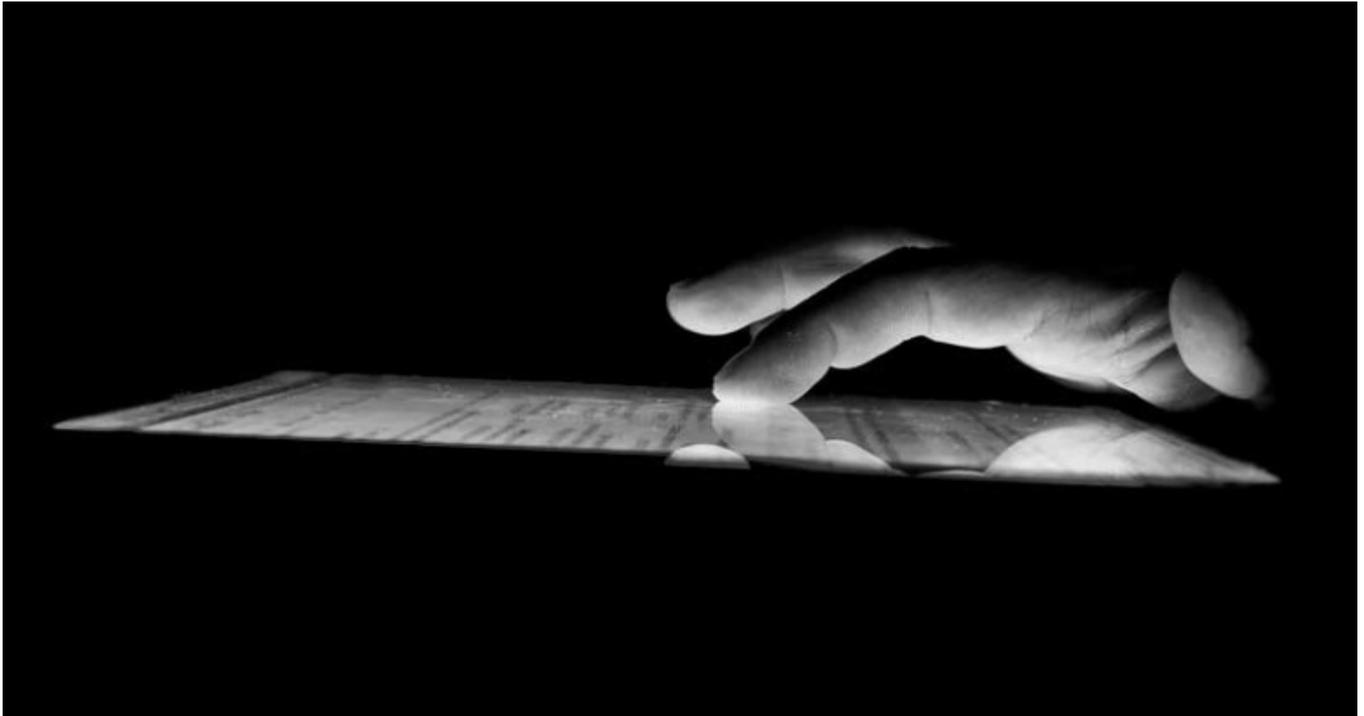


THE GLASS CAGE and the Future of Automation

When it comes to automation it is the web of processes built around our day to day lives , not rogue robots, which should cause us concern.



Zombies and vampires are dead and buried. They've been killed off by another lifeless threat. Even if many of the lifeless mechanical creations we've seen recently on our television screens (*Humans*) or at the cinema (*Ex Machina*) seem to be intent on impersonating *Mrs Doubtfire* more than the *Terminator* or *Robocop*, there can be little doubt that robots have taken over as the paranoia *du jour*.

But, as Nicholas Carr, author of [*The Glass Cage*](#), points out, rogue robots aren't really the problem. The threat is something far more ordinary and less cinematic.

Automation isn't especially new. The word dates from 1945, although the principle goes back millennia. It isn't generally something we see, or choose to see, either. And even when we do see it, at the supermarket self-

check-out or the airline self-check-in for instance, we're usually complicit in supporting the incursion.

Why might this be so? Why would human minds design something that has the potential to degrade our physical and mental skills? Why, indeed, would the majority of humankind silently support the development of software that, as Carr suggests, is ultimately "designed to discard us"?

The reason is probably that we've been duped into thinking that convenience and efficiency are pinnacles of human evolution and achievement, and have been persuaded that every messy human problem has a perfect digital solution—that, unlike humans, computers don't make mistakes.

This is blatantly ridiculous. Computers are designed and programmed by people. *We've been persuaded that every messy human problem has a perfect digital solution* Logically, therefore, all forms of artificial intelligence contain the seeds of real human stupidity and this can result in dreadful accidents and mistakes ranging from airline crashes to flash crashes in the stock market.

Take Google's self-driving cars: these are accepted as a worthwhile, even an essential development, because they will be efficient. They will lower urban congestion, speed up journey times, reduce automobile fatalities and allow little old ladies to be driven around like plutocrats. What's not to like?



Is the efficiency of Google's self-driving cars really worth it?

The argument goes that, once we are released from the 'chore' of having to drive ourselves around rather than take a taxi/train/bus we'll be free to expand our minds by reading Twitter in our Google pods. Or we might choose to extend our working days by filling in Excel spread sheets whilst gliding silently past rows of unemployed taxi/train/bus drivers walking quietly toward job creation and human re-skilling centres.

It's called progress. Get over it. People have been thrown out of work before. Doubtless there's someone way back in history that specialised in making ceviche of mammoth until someone discovered fire and hence slow roasts.

But, Carr argues, this time it's different. This time [artificially intelligent systems aren't simply throwing unskilled people out of work](#), they're de-skilling the professions and making jobs far less satisfying.

De-skilling sounds like employment-lite. It sounds like something that might make things easier or more accessible. But removing difficulty from work doesn't only make life less interesting, but also potentially more dangerous. Remoteness and ease, in various forms, can remove situational awareness, which opens up a cornucopia of risks.

Carr cites the example of airline pilots, who [through the introduction of increasing amounts of automation are becoming passengers in their own cockpits](#). Most of the time this doesn't matter. As a pilot you can probably update your LinkedIn profile and have a few martinis whilst flying over the Atlantic already. [But things can and do go wrong](#).

From an engineering point of view, complexity is synonymous with failure. When complex systems break down, or machines are faced with an original situation that they haven't been programmed for, they aren't much use.



Nicholas Carr speaking at the VINT Symposium in Utrecht, Holland in 2008

A frozen smart-phone isn't usually serious, but a computer that's in charge of an aeroplane full of passengers could well be. This is where dumb humans eat smart systems for breakfast. Humans can make nuanced judgements based upon ethical frameworks, whereas computers and automated systems can only follow instructions.

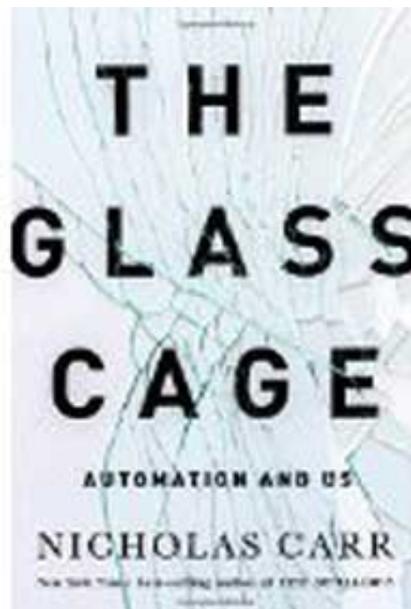
Or at least humans can do all these things if machines allow them to, if their skills haven't evaporated and if the interface between the operative and the machine gives real-life feedback. *Humans can make nuanced judgements based upon ethical frameworks* The example Carr gives here is aeroplane joysticks, through which pilots could 'feel' the plane through mechanical connection, but which are nowadays being replaced by electronic connections and simulations that isolate the pilot from reality.

Some people in Silicon Valley and elsewhere seem to believe that everything humans do can be boiled down to data and anticipated and enhanced via digital technology. In other words, there's an algorithm for everything. But as Carr points out: "The trouble with automation is that it often gives us what we don't need at the expense of what we do" and that "people allow themselves to be guided by social conventions."

My favourite section of *The Glass Cage* comes towards the end, and reminds me of my own desire for physical work. Fans of science fiction will most probably recall the film *iRobot*. But while *iRobot* is a film about robots taking over the world, it's also a very real company behind a series of devices including the Braava, which is a fully autonomous floor-cleaning machine that looks a bit like an overweight electronic Frisbee.

No sinister threat here, although I rather like cleaning floors and I'm not totally sure that I want the job taken away from me. "*Automation often gives us what we don't need at the expense of what we do*" After a sedentary day writing on a flickering screen I find physical tasks appealing, especially tasks defined with a precise beginning and end.

Carr picks up on this thought and the device he uses is [a sonnet by the American poet Robert Frost, *Mowing*](#). This explores the relationship between humans and their tools and makes the very valid point that work, or employment, is far more than a way of efficiently getting things done.



So what is to be done?

This is where *The Glass Cage* disappoints. Carr is good at highlighting what's going on from a technical perspective. He is also good at analysing how developments fit into a wider cultural context. But he doesn't have much to say about how things might change or how humans might say no. Carr says that widespread cultural rejection of automation is unlikely. If we

remain passive consumers of technology this is probably the case. It's almost impossible to undo technology or stop people inventing new things, especially when these inventions are rooted in free markets and the profit motive.

Perhaps the answer, as Carr does suggest, is “giving people precedence over machines.” But what does this mean and how might it be achieved? Should people demand that Sundays be made technology-free? Should government policy dictate that ethicists and philosophers be employed alongside computer engineers and venture capitalists? Should certain jobs be ring-fenced or machines be taxed?

I'd like to know.

Richard Watson is the author of [Future Files](#) and of the forthcoming book [Digital V Human](#).

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