"The real problem is not whether machines think but whether men do."

B.F. Skinner

#11 Technology

Technology, in one form or another, has been part of human life since time immemorial. Early inventors developed flints and axes, wheels and pulleys, presses and pens, engines and electricity; and early adopters reaped the rewards – cutting, rolling, learning, and powering their way ahead of the pack.

Thanks to the technologies of earlier eras, much of the modern world gained access to clean water and abundant food, was safeguarded from many crippling diseases, could communicate freely and widely, and was granted admittance to a library that would have made an enlightenment thinker gasp.

With the technologies of today, we're undoing centuries of work: we're polluting the water and destroying the land, we're awash with disorders of the mind, we're contacting without communicating, and we're using our plenitudinous library – the Internet – to watch videos featuring funny felines.

Yes, we have access to those earlier technologies, and better ones still, yet we're using them to – as Neil Postman put it some 30 years ago – amuse ourselves to death.

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Part of the technical system

Interview by Zan Boag

Andrew Feenberg is Canada Research Chair in Philosophy of Technology in the School of Communication, Simon Fraser University, where he directs the Applied Communication and Technology Lab. Feenberg is the author of many books on technology, including *Alternative Modernity* and *(Re)inventing the Internet*. He is also recognised as an early innovator in the field of online education – in 1982 he led the TextWeaver Project under a grant from the US Department of Education.

What do you think are the most significant positive and negative aspects of the role of technology in contemporary society?

The most positive aspects are obvious: technology supports modern life, and all the good things about it. We have better medical care than people before, we have mobility in space, we have communication across the globe – there are all kinds of good things to be said about it. The bad things are also obvious: everyone knows about nuclear weapons, climate change, the terrible problems of developing countries, we could go on and on.

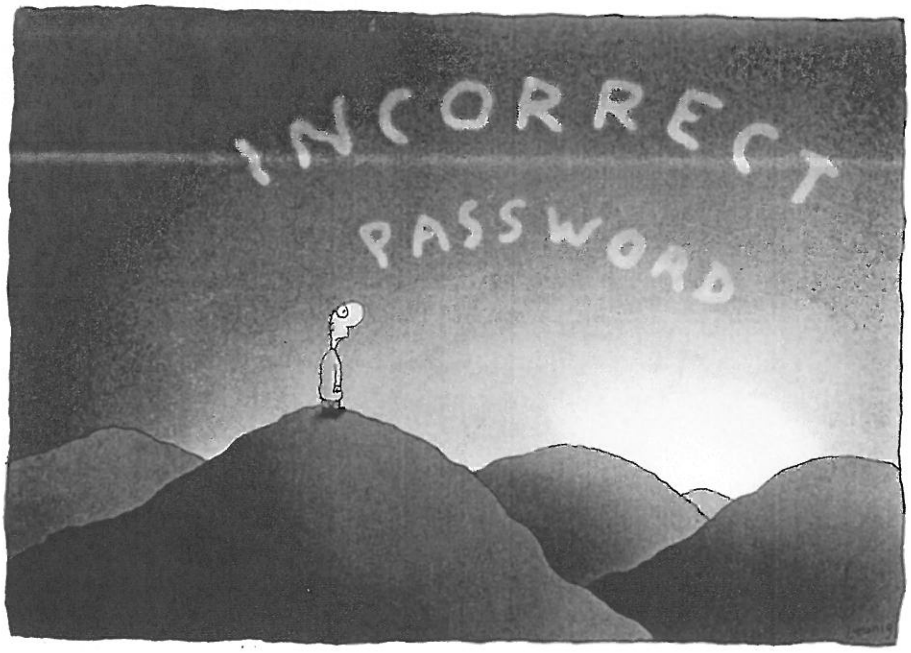
Are there particular groups who are worse off as a result of the increased use of technology?

Yes, of course. I think the greatest catastrophe of modernisation is suffered by poor farmers, who are impoverished by competition with industrial agriculture and forced off their land. This is an enormous human catastrophe. Instead of improving family farming with modern methods and help with transportation and communication, it has been pretty much destroyed without anyone thinking much about what to do with all the people whose livelihood depends on it. Life may be very hard in rural areas in poor countries, but you can't say it's a great improvement to be living in a slum where there's drug violence, no jobs, no clean water, and so on. This is the largest social group – you're talking about a billion people, at least – that has suffered the most from the current wave of modernisation.

Philosophers from Marcuse all the way back to Aristotle have something to say on technology. Heidegger argued that with contemporary technology there has been a profound change in the nature of technology itself. What do you think of this?

Heidegger makes a distinction between traditional technologies based on hand tools, and modern technology based on machines. He's got nothing against traditional technologies, but once vast, modern technological systems develop that encompass whole societies, people are absorbed into the technology – they become objects as well as subjects of the technologies and their behaviour and their lives are structured by the system. I think of this every time I take an aeroplane, which I do all too often. When you arrive at the airport, you become part of the technical system. You're told where to go, what to do, what to present, to whom. All of your behaviour is organised in advance by the system, and if you step out of line you can get in a lot of trouble. You're just another piece of equipment in the aviation system. Now it's true that the hostesses act like you're a person, and you can chat with them, but that's insignificant – the overall phenomenon is one of technical "enframing", as Heidegger calls it.

What concerns Heidegger is not so much that people lose their ability to do what they want once they're incorporated into the system – he thinks they lose their sense of themselves as 'human'.



I wonder what he would have to say about the current use of technology. It seems to have devolved into little more than a form of distraction for people…

You are thinking of video games and smartphones – yes, of course people have become absorbed in their gadgets to an unprecedented extent in the last few years. That is quite remarkable and certainly would not cause Heidegger to rethink his position; in fact it seems to confirm it. On the other hand this is what I would call an ambivalent phenomenon – the ability of people to use these instruments to communicate and organise their practical lives also has a positive character that shouldn't be dismissed. This is a problem that comes up in studying the Internet. It's true that on the Internet there's a lot of commercialism and surveillance and the bad guys seem to be sleeping well – once again. The Internet was supposed to liberate us, but it hasn't actually accomplished the mission. So, there's a lot of hype and counter-hype in the discussion of the Internet, but the reality is neither one extreme or the other.

It's early days, we're only in very early stages of the adoption of Internet technologies and other technologies.

Of course, we have no idea what the future of the Internet is – it's impossible to foresee. People still make use of the Internet for such a wide variety of purposes: everything from criminal activities to revolution to organising their international travels… how can anyone purport to know what this technology is about when you hear, for example, that migrant workers in France use the Internet to read bedtime stories to their children in Tunisia. What can you say? There's no way to sum up this system in a single message that would enable us to condemn it or praise it.

Are people behaving worse online than they would face-to-face?

If you read the comments after news articles, you get plenty of evidence that people are behaving badly, but how do you compare because you don't know what they're doing in their private life. This is just a public scene on which to act like an idiot.

What do you think of how our notion of personal identity has changed because of the ability to create virtual identities?

It's true, on computer networks you observe a new ability to manage identity. We've always had this possibility, for example through the way we dress, but now it can be managed in much more detail, much more reflexively, because identity is basically presented in writing, or if not in writing, in a video that can be edited. This enhanced ability to edit and manage identity goes along with the diminution of the risks of self-presentation. All those things that surround the honour and dignity of the person seem to have diminished in importance as the ability to manage identity has increased through anonymity. And it's also possible to withdraw from communication much more easily. So if someone insults you on the Internet, you can just cut the connection. You're not forced to stand there and look at them.

From what I've read of your work I can see that the idea of how technologies are shaping – and being shaped by – con-

temporary society is important to you. Can you elaborate on this?

Not so long ago, the philosophy of technology was deterministic – at least in the social sciences. Most researchers thought that technology determined society pretty much along the lines sketched by Marx: the technical infrastructure and the forces of production shaping the superstructures. It was also widely believed that technical progress was contingent on scientific progress, and scientific progress itself was viewed as extrinsic to society. So in the end you had a theory that technology had the power to shape society without being shaped by it: a one-way street. What has changed is that we now recognise – as the result of a generation of struggles around the Internet, the environment, medical systems, and so on – that technology is also shaped by society. It is not a one-way street, it's a two-way street. And we call this 'co-production' of technology and society. It requires a premise that explains how this is possible. This is the notion of underdetermination, the idea that technical development is not determined exclusively and fully by technical considerations. This makes more sense than the deterministic view. As many engineers know, there are always many ways to do things with technology. The engineer is faced with a whole variety of solutions to the problem he's been given, and he chooses one among them. This is where the social intervenes – in the choice among viable options.

Many people have the view that 'technology will save us' – can it?

Certainly we are working hard on getting ourselves saved with technical innovations, with new ways of generating energy and so on. In some countries, like Denmark, they've succeeded in replacing a large proportion of their fossil fuel resources with renewable energy. If you take that as a model, you could imagine huge reductions in greenhouse gas emissions and perhaps a viable adjustment to climate change. Of course, the political resistance – and economic and corporate resistance – to that is very strong. The political advocacy for change is relatively feeble so far. People have to connect all the terrible weather events that they're encountering to the climate change hypothesis in order to begin to put more pressure on their political leaders to make the necessary adjustments.

But will people give up the benefits they receive from a life of overconsuming and overpolluting?

People's preferences have to change. This has happened in the past. I remember when OPEC tripled the price of oil and people had to line up at petrol stations in the United States for hours to get petrol. Suddenly small cars became more attractive and people discovered advantages in smallness. The small cars had much better suspensions and steering, they were easier to park, you could manoeuvre your way out of traffic jams. So the market for smaller cars emerged at that time out of economic necessity, but it has stayed around out of changed preferences. The economics is more flexible than people often think. We pay more for cars but they are better and use much less fuel than they used to. I can easily imagine changes occurring along similar lines in response to the climate issue. For example, the generalisation of solar to create energy on rooftops might result in cheaper energy. What is the generating capacity of all those roofs that are now just used to keep the rain out? In Australia alone it's probably enough to power the whole planet. ◘

There's no way to sum up this system in a single message that would enable us to condemn it or praise it.

Photo: Per Gosche

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