

From the Archives: The Ideology of Science

Christine Ledger

Science and technology – think for a while what power and control they have put in our hands. We can fly to the other side of the world in a matter of hours – what superb transport. No longer do we fear smallpox and plague – what control over disease! Our houses have wall to wall carpet, our water is clear, pure and on tap. For dinner, we can choose from an enormous variety of foods. By pressing a few buttons we can speak to a person on the other side of the world. We can clothe ourselves for every season and in any colour.

Food, clothing, shelter, water, transport, communication, health. Our basic and material human needs are now met beyond the dreams of our grandparents, thanks to the power of science and technology.

And that's not all. There is icing on the cake. As well as satisfying our basic needs, science and technology have brought bonuses galore. They have carried people into space to survey stars and planets. Computers and robots have transformed work, removing sweat and drudgery. Babies made to our genetic fancy may not be too far away.

With technological change, our skills, our competence, our control over our lives and over nature have all increased enormously. Who are we to worry about technology?

There are many myths surrounding science and technology in our society. And I have been giving expression to one that is one of the most pervasive and, I believe, the most dangerous. This myth is that science and technology have increased, and will continue to increase, our competence and control. At best this myth conveys a half-truth; and at worst it seriously distorts and conceals reality.

First – the half-truth. Maybe one-third-truth is the more appropriate way to describe this. The way in which technology has satisfied basic human needs of food, water, shelter and the rest can only be said for, at the most, one-third of the world's hungry and poor there has been no dramatic improvement. The statistics of poverty and hunger are grimmer than ever. Even direct attempts to channel science and technology to the alleviation of poverty during the so-called 'Development Decades' after World War II failed dismally.

Well, you might say, that's just a matter of bad distribution. The technology is OK – it's the way we use it, hoard it, that is the problem. I will return to this point later.

Return now to the fruits of technology that we enjoy in the right one-third of the world. Consider the increased competence and control that we enjoy here.

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I want to suggest that, in many ways, this aura of competence and control surrounds an empty shell. For in many ways our competence, as individuals and even as whole communities, has dwindled to the ability to turn on a switch. It is not competence we have gained, but increasing dependence on systems, seemingly beyond our control. With that dependence has come a deep sense of powerlessness and incompetence.

Basic human skills of survival and self-reliance are being lost by our societies, fading from our corporate memory. If there were no bread in the shops, how many of us would have the skills and ingredients to bake our own? If the oil supply ran out – no cars, no public transport – how would you get to the other side of the city? In the event of a disaster, as disaster which destroyed the complex web of technology that we cling to, how would our communities cope? Our dependence on sophisticated technological systems has eroded our sense of interdependence on each other as people living in community. As a result even our social skills – helping each other to grieve, to celebrate, to cope with problems – are shrinking. Is it any coincidence that it is in the most sophisticated technologically advanced societies that the occurrence of suicide is highest? The mystique of competence and control is a thin one.

Yet, even as this myth of competence and control is challenged, we cling to its corollary. We cling to faith in the ‘technological fix’. By ‘technological fix’ I mean the trust that to all existing problems, a technological solution can and will be found. The contraceptive pill will solve the problem of over-population; IVF will solve the problem of infertility; nuclear power will solve the problem of the oil running out; Star Wars will solve the problem of nuclear weapons, which were created to solve the problem of war. And of course it is only a matter of time before there is a technological fix for AIDS, for oil pollution, for the inconvenience of pregnancy. You can add to the list, I am sure.

We cannot deny that technological change has alleviated human pain and suffering in some areas of life. The invention of industrial machinery, computers, medicines has changed lives. But it is important to understand that these changes were not simple and in one direction. Many bred as many problems as they solved. Pollution, nuclear terror, industrial accidents, cancer and many other modern problems have been aggravated by technological progress and await the next technological fix.

Hence we come to challenge another myth about science and technology – that they are value-free, beyond politics. Technological change is often regarded as being inevitable and heading in one direction there is only one choice to be made; to be on the train or to miss it. There is little discussion about choices in technology, different models of technological development. Technology just keeps getting better, faster, more sophisticated, inevitably.

This perception of technology is closely interwoven with the way we understand scientific knowledge. Science is commonly regarded as being objective, value-free, removed from society and politics. Science gives us correct answers on which to base ever more refined and powerful

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technology. The fact that so much authority is invested in science is closely linked to the fact that its running mate, technology, is so rarely challenged.

However, cracks are beginning to appear in the value-free, apolitical image of science and technology. The immense amount of scientific research and technological development that is geared to the military machine is being deplored. Implications from unemployment levels and the nature of work itself flowing from the introduction of new technology are being drawn. And it is being realised that there are no easy answers to ethical dilemmas related to bio-medical research and development – genetic engineering, IVF, etc.

In examining science and technology through these cracks, I have found it useful to apply three criteria: justice, participation and sustainability. Many of the problems and dilemmas of modern science and technology can be seen as pivoting around injustice, non-participation and unsustainability. First, there is the injustice built into the economic and political systems which depend upon and support sophisticated technology, and which hinder the path of true human development. Second, there is the unsustainability of current patterns of resource use and wastage inbuilt to technological development and which threaten ecological catastrophe. Third, there is the non-participation of an increasing proportion of the world's people in decision-making due to the erosion and abuse of power.

For science and technology to serve the common good, ways need to be found for technological development to facilitate just distribution of power and resources, to work comfortably within the earth's capacity to sustain life, and to build upon and foster political economic systems that reflect the needs of all people. Only then will the other two-thirds benefit from the fruits of science and technology.

As students, we should be particularly concerned about whether our education, including our religious education, is preparing us for a world where difficult political and ethical issues related to science and technology are surfacing. Do you find that your education prepares you to understand and respond to genetic engineering, for example?

Increasingly our education system is preparing people to live in a technological age by emphasising technical skills. Maths, science, computer programming are prized more than ever at the expense of humanities. People are trained to fit into the network of computers, not to question it. I am reminded of my own scientific education. In a course on radio chemistry, I learnt about chemical and physical properties of uranium but was actively discouraged to explore biological or political properties. Yet it is this type of education which trains experts who are expected to have insight into ethical and political matters related to science and technology.

Just as our technology can render us incompetent and unprepared for emergencies in life so does our education leave us ill-equipped to approach the problems of society. Though each generation

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may be becoming more literate in computer languages and techniques, each generation is becoming less literate in human history, values and politics.

Ideally our education should equip us to be responsible and competent human beings. Our technology should do the same. The tragedy is that though both give us the illusion of having power over lives and over nature, it is only an illusion. Neither education nor science and technology can afford to pretend to be value-free. Rather, it is time for education, particularly scientific and religious education, to enable us to identify decisions facing us in society about technological change and to equip us with the skills and confidence to find ways to participate in those decisions.

Technological change is not linear and inevitable. Just as education can be shaped to foster self-reliance, initiative and responsibility, so too can technology. Much of current technological development centralizes power and wealth in the hands of a few. It leads to the wasteful and irresponsible use of natural resources. It alienates people from each other and from political processes. In a world where the majority of our scientists and vast reservoirs of human intelligence and natural resources are devoted to war, while millions are denied food, water and shelter, we cannot regard the current path that technology pursues as being responsible. Even those of us who taste the benefits of technology are on very thin ice if faced with crisis.

Technology need not be a 'naughty' word. It will not be if in our political processes, a technology strategy is chosen which strives for the just distribution of power and wealth; which conserves the resources of the planet carefully rather than plundering them or wasting them on war; which equips people with skills, understanding and the confidence to participate fully in society.

There are no easy answers to the questions raised by technological change. However, it is better for us to be prepared to seek the answers together rather than avoid them or to leave them to the experts. An education system which strived to bring together the wisdom and insight found in different disciplines and different cultures would be a key ingredient. When people with different experiences, different cultures, different talents, and different ideas meet, we may glimpse alternative futures. Technological change need not be inevitable and along a one way street. The challenge is to choose paths that enhance human dignity and competence.

- *This article was first published in the December 1989 issue of the WSCF Journal of WSCF. It looked to offer a contribution to the faith, science and technology debates occurring at that time. Christine Ledger, of Australia, was the Co-Secretary General of WSCF (1986-1990) and the WSCF Treasurer (1999-2004). She holds a Masters in Science and Society. This article is based on a speech given at the WSCF Europe Conference on Genetic Engineering.*

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