

The Golem in the Room: Technology and its Central Role Within Society

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From the first flints hacked into rudimentary blades to the latest satellites, attack helicopters and wiki-sites, technology changes society. But is technology itself an agent of change? Personifying technology gives the impression of a Faustian pact, of technology having a mind of its own. Some readers may recall a TV series in 2004 featuring Jeremy Clarkson, "*Inventions That Changed the World*", that gave a history of the gun, computer, jet engine, telephone and television and described how these technologies moved unstoppably around the globe as if possessing a will to grow and conquer (1). This is just one of many examples of the media portraying technology as an entity that acts under its own internal logic. But our inventions do not operate of their own volition: they are chosen and used by human beings and thus subject to human will. It could also be argued that as a product of society, any changes brought about by technology are brought about (albeit indirectly) by society itself (1). Market forces and many other social factors may influence technological development and the chances of a technology becoming significant through use, but technology is an interaction between social and physical realities, and can conjure up some unexpected surprises. It has been likened to a "clumsy golem," (2) in that it lacks free will but remains capable of surprising, and sometimes maiming, its creators and users.

The balancing of competition and co-operation (in both military and monetary worlds) inherent to the use of technology as an extension of human will is often ignored by those involved in the technological determinism debate, and this muddies the already confusing question of how much we, too, are slaves to technology. Technology acts as a vector through which the desire of the individual, the corporation and the nation-state are expressed. Being the only frequent manifestation of many major corporations and authorities (such as Microsoft, Sony, Samsung, or the university computing service) it is easy to act as if the will being imposed on us is that of the machine, and not the people who created it.

In competitive situations, technology gives us an edge. In the introduction to "*Guns, Germs and Steel*," Jared Diamond attributes much of Europe's success in invading and colonising other continents to "cargo," or technology

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that allowed them to gain the upper hand. Guns and steel were militarily superior to Aztec obsidian clubs and feather padding, and the "germs" that wiped out nearly 90% of the indigenous population of the Americas were the product of urban living and cohabitation with domesticated animals,

allowed by various agricultural revolutions and innovations. Whilst Diamond places emphasis on the environment in which a culture develops, he portrays the proximate factors bringing forth European domination as predominantly technology-based (3).

War remains a significant aspect of human society, and technology a significant aspect of war. Increasing military sophistication drives further innovations in weapon technology and has the ability to alter the course of history, the arms race during the Cold War being the prime example. However, conflict may be brought about by the



mere perception of technology. The Second Gulf War was instigated without UN approval on the basis of claims that Iraq possessed 'weapons of mass destruction' (WMD). The lack of concrete evidence of the existence of WMD subsequent to the war in Iraq highlights that it was not technology that created the conflict, but the perception that the technology required to create WMD was present in Iraq. Evidence of nuclear weapons testing by the Democratic People's Republic of Korea has once again increased international tensions in the past year.

However, the inter-dependence of modern western militaries brought about by high technology has become paradoxically a disincentive to full-scale conflict and a means of preserving peace. Many of the world's major military powers are dependent on missiles developed, produced, and maintained by France (4), for example. With the purchase of American microchips for weapons

technology by Russia, the USA is the only militarily significant country that is now not heavily technologically dependent on any others - and thus relatively more dependent on favourable international opinion.

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This interconnectedness – the “rise of the network society” – is made possible by ever-improving communication and transportation technologies, and is moulding interactions between individuals, companies and countries, making the world much more complex (4). However, this is not driven by the spontaneous birth of technology, but by research and development, funded by the market and responding to its demands. Technology, and its ability to extend the will of the producer and consumer, is a limiting factor rather than the driving force of this revolution. The drive for growth, and the desire for wealth that is a hallmark of capitalism, is the source of this change (1).

So how great a hand will technology play in our future? It hardly needs to be argued that as innovation builds on previous inventions technology will become more significant than ever, but it is likely to be the “ingenuity gap” (5), the absence of technology where it is sorely needed, that will have the greatest effect on society. The predicted energy crisis and climate change pressure us as a society to conceive of alternative sources of energy, which may not necessarily be forthcoming. Whilst nuclear fusion is seen by many as the best source of energy in a world free of fossil fuels, it

remains elusive. The US Office of Technology Assessment in 1987 concluded that some \$40 billion investment and twenty years more research would be required to reach a stage where fusion’s “economic feasibility” could be evaluated. In 1998 most experts believed that commercial reactors would not be available before 2050. Money and investment alone cannot overcome certain holes in basic science needed for technology- evident when we consider that as long ago as 1971 President Nixon called for a crusade against cancer. Although research has received \$30 billion of investment since then, “progress has been excruciatingly slow.” Some boundaries of science are simply harder to advance than others (5).

Competition is another often ignored aspect of the debate on how technology affects our lives. It is not only science, but also the market and politics that affect the development of technology. The exhaustion of oil supplies and global warming may ultimately be problems addressed by the consumer - it is likely that oil will become uneconomical before it is exhausted. Biofuels and the technology necessary to make the transition to them already exist, but they remain uncompetitive in an economy heavily geared towards the use of fossil-fuels (6).

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How should we look at technology and its effects on our lives without exaggerating its Faustian attributes? Technology is not necessarily predictable, and what form it will take in the future is unknown. Technology forces us to make compromises in order to use it to get what we want (from the world and from other people), because it is an interface between our desires, those of others, and material reality. Whilst the media and many technocentrists may accord far too much importance to applied science and forget about political economy, as a society we cannot afford to ignore the golem in the room.

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References:

1. Smith, R., Marx, L., Does technology drive history?: the dilemma of technological determinism, London: MIT Press, 1994
2. Collins, H. M., Pinch, T. J., The Golem at large: what you should know about technology, Cambridge: Cambridge University Press, 1998
3. Diamond, J., Guns, germs and steel: a short history of everybody for the last 13000 years, London: Vintage, 2000
4. Castells, M., The information age: economy, society and culture. Vol. 2, The power of identity, Oxford: Blackwell, 1999
5. Homer-Dixon, T., The Ingenuity Gap, London: Vintage, 2001
6. Lomborg, B., The sceptical environmentalist: measuring the real state of the world, Cambridge: Cambridge University Press, 2001

