

# The information sensation

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**The Cult of Information: The Folklore of Computers and the True Art of Thinking.**

By Theodore Roszak.

Lutterworth, Cambridge, UK/Pantheon, New York: 1986. Pp.238. £12.95, \$17.95.

NOT long ago, a normally balanced and slightly conservative BBC TV science programme interviewed the director of a leading artificial intelligence (AI) laboratory in the United States. The man, comfortably seated, pronounced that:

As machines evolve, and machines get smarter and smarter, it becomes difficult to imagine how you can have a machine that is millions of times smarter than the smartest person and is really our slave. I think that the artificial intelligences of the future will be worried about weighty problems that we simply can't understand. They may condescend to talk to us, amuse us on occasions, or play games we like to play and, in some sense, keep us as pets.

Even the most enthusiastic researchers in AI felt that this was at best a gross piece of exaggeration, and at worst a sign of serious confusion in the mind of the speaker. But many were perplexed not because of what was said, but why it was said and why the producer did not drop the scene on the cutting-room floor as he would have done with the ravings of some innocent. Theodore Roszak gives a most plausible answer: the speaker was unashamedly exaggerating in order to sell the products of his lab. Roszak continues:

The reason for such conscienceless self-advertisement is not difficult to identify. There is a great deal of money at stake. ...AI has been one of the most richly funded fields of academic research over the past two decades. ...AI is back in the public eye and placed high on the military-industrial payroll [p.123].

So much for the academic. What of the producer of the television programme? He too is seen by Roszak merely as a cog in the military-industrial mechanism:

...the media...are always in the market for amazing predictions; the journalists want authoritative reports that corroborate the futurologists. In turn, reports of that kind feed back into industry projections of future growth, helping to sell stock and attract venture capital [p.31].

As further evidence of confusion in the minds of AI researchers, Roszak describes the way in which the self-same scientists, under persistent, sceptical questioning about the possibility of machine translation or a machine's ability to summarize human writings and ideas,

will privately admit how impossibly difficult such tasks seem, and how far off realistic solutions might still be.

However it would be unfair to give the impression that this book just throws mud at boastful scientists and the sensation-seeking media. It has a much deeper importance as an analysis of the interplay between science and technology on the one hand, and the affairs of living beings on the other. Information technology is a good vehicle for the argument. Most people will be aware of the special attention this field has received in the past decade, but some may not have thought of the potential that such publicity has for the distortion of cultural values.

Roszak sees that defining as legitimate only information that can be digested and logically validated by a computer may devalue the force of ideas and morals that we traditionally live by ("All men are born equal", for example). If computers are given too much prominence in the affairs of men through special pleading based on a potential financial payoff, ideas and morals (valueless, in terms of cash) may tend to go by the board. The concomitant closure of philosophy departments and expansion of computing departments in British universities suggests that such fears are not entirely unfounded.

It would be all too easy to dismiss Roszak as an anti-progressive, a relic of the counter-cultural student movement of 1968, or as a mystic who refuses to acknowledge that the living being is merely some kind of computer. But that would be to miss his central message, which is that computer scientists and the entrepreneurs who support them have no interest in examining the limitations of computer science; papers on theories of computer incompetence hardly excite journal publishers or bode well for further prospects of funding. As a result, the experts may even be fooling themselves that their craft has unlimited potential.

Worse, however, is that governments, in particular that of the United States, seem to have enthusiastically accepted this over-estimate of potential computer performance. The Strategic Defense Initiative is a case in point. Curiously, computer scientists are now denouncing the credibility of this idea, without realizing that they themselves are in part responsible for the gap between what is technologically possible and what some politicians

are busy selling to the electorate. One element in the deception has arisen from the adoption in technology of prosaic words such as "intelligence", "memory", and, indeed, "information" itself. Such usage not only denudes the concepts associated with these words of most of their original richness, it then misleads the public into thinking that the machines so described actually possess some of that richness.

Roszak uses this argument to attack some recent trends in computer education that go under the banner of "computer literacy", a phrase that is often used by fund-raising educators and by politicians when they are summarizing their achievements. More often than not, "computer literacy" was used to mean "knowing how to program in BASIC". That particular language fell out of favour for encouraging sloppy programming habits, and the next in a long series of contrived languages was brought to the fore. In fact, this progression comes from the need to produce languages that hide the machine's incompetence. It is absurd to use the word "literacy" in this context as implying inadequacy in those who don't get on the languages track. The onus is clearly on the technologists to produce machines that don't make such demands.

Roszak develops his philosophy by distinguishing the human information culture (ideas, beliefs and morals) from the machine information culture which is characterized by symbol manipulation that can only act as a repository of the products of human thought. His proof lies in the generally accepted notion that computers can follow only formally stated rules (stated by human beings using some mathematical formalism, that is). He quotes the answer that Descartes gave when questioned about the source of his inspiration: the Angel of Truth appeared to him in his sleep and revealed the weighty secret. Putting it simply, the process of creating ideas cannot be formally stated, making it unavailable to machines.

It is a pity that Roszak has entered this arena without showing awareness that others, from Koestler to Searle, have brought heavier philosophical gunfire to bear on the matters in question. It also leaves his arguments open to dismissal by those who believe that computers are capable of creativity by racing through endless possibilities. But neither point should detract from the persuasive way in which Roszak writes, the inescapable value of what he is saying and the sheer joy of feeling that those technologists who thrive on sensationalism may have a case to answer. □

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• The new, second edition of Donald Michie's *On Machine Intelligence*, published by Ellis Horwood, will be reviewed in a future issue of *Nature*.