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> *"Any clod can have the facts, but having opinions is an art."*
> *Charles McCabe*, San Francisco Chronicle

The Myth of the Intelligent Computer

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When I awoke to the radio announcement that Deep Blue had beaten world chess champion Garry Kasparov, I was at first bemused and then dismayed. I was bemused because I had just written a column ("What Can Computers Do?" May 1997, p. 11) that clearly explained why it would actually be Deep Blue's *designers*, *programmers*, and *builders* who had beaten Kasparov, not the machine itself.

I was dismayed because—as surely as night follows day—the radio, television, and newspapers would unleash a torrent of utter claptrap about the Intelligent Computer, and some would even forecast the imminent takeover of the world by silicon-based life forms.

That this is complete twaddle is easily demonstrated. That it will be widely believed is a condemnation of our education system, which should be giving our children truth and self-respect, and of our own industry, which actively promotes the myth of intelligent machinery.

Intelligence is social

To imagine that intelligence can be equated with skill at chess playing is to completely misunderstand what intelligence is. Chess playing is to logic and calculation what intelligence is to relationships and negotiation. Chess is abstract; intelligence is social.

Intelligence is not only displayed socially, it is induced socially. Not only intelligence, but the ability to become intelligent, comes from social stimulation and interaction. People exhibit their intelligence as they learn it, entirely by the richness and versatility of their behavior with others. Did you see Deep Blue on television? Any behavior at all was only implied, and even this implied behavior was anything but rich and versatile.

Intelligence is multidimensional

In *Frames of Mind*, (Basic Books, 1983), the celebrated and respected Howard Gardner distinguished seven dimensions of intelligence: linguistic, logico-mathematical, spatial, musical, kinesthetic, intrapersonal, and interpersonal. Even more have been identified since then.

To hold that a written test that takes 30 minutes or so to complete can be used to measure intelligence must be the greatest educational con job of all time. Although individuals will differ from one another (and from themselves from time to time) in their skills in these various dimensions, all normal individuals will have a modicum of skills in each—otherwise they are subnormal.

In how many of these dimensions does the Deep Blue program have any capability at all? Only one, logico-mathematical, and here its capability is quite inhuman, both in kind and degree.

Who needs androids?

Of course, in 50 or 100 years' time we may be able to build machines that can simulate, even perhaps *possess*, skills in all these dimensions. But by then these machines will no longer be computers. Science fiction writers have long called such machines androids. Isaac Asimov, in particular, wrote many of his stories about the problems of fitting androids into human society. Asimov's stories raised many moral and philosophical issues, most memorably "The Caves of Steel," which featured an android detective called Daneel Olivaw.

It may be that we will eventually make such machines. But it is hard to see why. The people who are able to own such special-purpose machines as Deep Blue will get much more benefit, at least in the short term, from their very special-purposeness.

Consider the effectiveness of the highly specialized network of computers that runs the international financial market. Many eminent economists consider that this machine is so effective that national governments no longer have any control over the economies of their countries. As one scholar put it, "The policy role of government has…been reduced to one of obedience to financial and foreign exchange markets." (R. Mathews, Australian National University, quoted in *The Australian Financial Review*, Nov. 25, 1996, p. 14.)

The result is an accelerating gap between rich and poor people and between rich and poor nations. As one observer sardonically points out, there are more than six million people in the world worth more than $1 million and more than 1,000 people who die every day of diseases that would cost at most $1 a day to treat.

With special-purpose machines as effective as the world's financial engine, who needs androids? ❖

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