Looking Back

The Human Checkmate

The world's greatest chess player lost to a computer ten years ago, in a match widely purported to portend the rise of machine intelligence, and perhaps eventually the supplanting of humans as the dominant intelligence on earth.

The first attempts to make chess programs for digital computers date back to the 1950s (including an effort by Claude Shannon, the father of information theory). As computers improved, so did their chess skills. In 1966, Soviet and American computers were pitted against one another in the first international computer-chess match. The Soviets won.

By 1996, Garry Kimovich Kasparov had been the world's top-rated chess player for a decade. In a match that year, he beat Deep Blue, an experimental IBM computer dedicated to playing chess, although he lost the match's first game. But for a rematch in May 1997, the 1.4-ton computer was greatly enhanced: It was capable of analyzing over 200 million moves per second and had been specially tweaked to take on Kasparov. The human champion won only one of the six games in the rematch; the rest were losses or draws. It was the first time a computer defeated a reigning world champion, and it was the first match Kasparov lost—*ever*. IBM declined his request for another rematch.

Few close observers of chess or computers were shocked by the Deep Blue victory. Kasparov is perhaps the greatest chess player ever to walk the earth, and he only lost the last game of the rematch because of an uncharacteristic blunder. But computer chess had been steadily improving and was expected to eventually exceed the level of the best human players.

Kasparov's defeat was taken by extreme proponents of artificial intelligence (AI) as another confirmation of their basic beliefs. In time, wrote one AI researcher, "machines will begin to do well in areas a greater number [of people] can appreciate" than can appreciate chess. "The visceral sense of a thinking presence in machinery will become increasingly widespread" and the notion of thinking machines will "become self-evident." Eventually, machines will surpass humans in overall intelligence and we will be replaced by our artificial progeny.

Of course, chess is precisely the kind of activity that computers can excel at: its rules and strategies can be reduced to mathematical and logical patterns. The most important aspects of life cannot be so reduced. The talk of intelligent machines taking over the planet thus reveals less about the reality of AI research—which has had a long history of bold promises and gross failures—than it does about the radically anti-human aspirations of the researchers. In the end, though, those very aspirations are self-refuting, for they reveal what machines do not have and never will: a *desire* to create something new, to be something more, to do something greater. We need not worry about the technical excellence of the machines we create; indeed, we should admire it. It is the dreams of some of the machine-makers that should concern us.