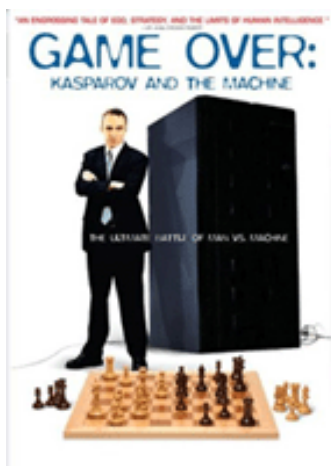




BOOK REVIEWS

From the Archives

Hosted by
Mark Donlan



From the Archives...

Since it came online many years ago, ChessCafe.com has presented literally thousands of articles, reviews, columns and the like for the enjoyment of its worldwide readership. The good news is that almost all of this high quality material remains available in the [Archives](#). The bad news is that this great collection of chess literature is now so large and extensive – and growing each week – that it is becoming increasingly difficult to navigate it effectively. We decided that the occasional selection from the archives posted publicly online might be a welcomed addition to the regular fare.

Watch for an item to be posted online periodically throughout each month. We will update the [ChessCafe](#) home page whenever there has been a “new” item posted here. We hope you enjoy *From the Archives*...

The Demise of Chess as We Know It?

Hanon W. Russell

Kasparov versus Deep Blue: Computer Chess Comes of Age by Monty Newborn, 1997 Springer, Hardcover, English Algebraic Notation, 322pp., \$29.95

Kasparov v Deeper Blue: The Ultimate Man v Machine Challenge by GM Daniel King, 1997 Batsford, Softcover, English Figurine Notation, 112pp., \$14.95

The matches between IBM’s Deep Blue Computer and world champion Gary Kasparov in 1996 and 1997 were the focus of intense interest worldwide. How would the silicon monster fare against one of the greatest chess geniuses of all time? If Deep Blue won, would that mean the demise of chess as we know it? Although the 1996 and 1997 matches did not provide definitive answers to these and related questions, recent publications about the matches have helped chessplayers to define their inquiries more clearly and obtain some helpful information in return.

When our review copy of *Kasparov versus Deep Blue: Computer Chess Comes of Age* by Newborn arrived, the initial reaction was that it was too little too late.

You see, the 1997 match had recently concluded, and this book was about the 1996 match. Was it even worth reviewing or was it already out-of-date?

A closer look revealed that this handsomely produced hardcover book was much more than a story about the 1996 match; it was a scholarly work that presented a detailed history of computer chess, from its beginnings in 1950 through the 1996 Kasparov-Deep Blue match. For those readers who are technically inclined, the text is replete with discussions of algorithms, alpha-beta searches and other such things, all of which were incomprehensible to your humble reviewer.

The techno-babble aside, Newborn tells the story in very readable fashion. Ten chapters and five appendices will make the reader very well acquainted with the trials and tribulations of the development over the last half-century of computers that play chess. We are taken on a journey beginning with the invention of chessplaying computers, the problems faced by the developers and programmers, the improvements and ultimately the 1996 match which resulted in Kasparov's victory, but not before he was defeated by Deep Blue in Game 1.

British GM Daniel King's book is a different matter. This was one of those instant-press books, rushed out within a week or so after the conclusion of the 1997 match. It too however has much to recommend it.

The first forty or so pages of King's book deal with the history of chessplaying computers and, to a larger extent, the prior encounters between Kasparov and the silicon monsters. Then each game of the six-game match is presented, well-annotated, with two or three pages of introductory remarks and insights that give the reader a nice feel for "being there."

Understandably, the emphasis on the history of man versus machine is much less in King's book, and it does not pretend to be otherwise. His objective was to appeal to serious players and the more casual enthusiast, without getting bogged down in very much technical computer discussions. From that perspective, he has succeeded.

From Chapter 10 ("The Future") of Newborn's book...

"It is most natural that man finds a way for his newest, greatest tool, the computer, to compete, and the game of chess is the ideal medium for the competition. Chess may serve the computer industry as auto racing has the auto industry. Many advances in the auto world were first tried on racing models and then after refinement incorporated into commercial vehicles. This may be the pattern in the computer field, too, where techniques used by computers to play chess are on the cutting edge of developments in complex problem-solving. Of course, there are many ways in which computers can compete. We have seen robot mice working their ways through mazes, computers competing with one another as artists and musicians and even as poets. There have been programming contests involving hundreds of participants. But at least

for the near future, chess is likely to remain the primary battlefield and testing ground for computers.

“The lessons of computer chess are relevant to a large class of important problems in computer science, problems that depend on search such as automated reasoning, molecular synthesis, scheduling problems, and even in the design of computers themselves. In automated reasoning – as was touched on in Chapter 4 when discussing automated theorem proving – a computer is given a set of statements about some problem and asked to draw some conclusion. The computer might be given information, for example, about the objects in a room and asked whether a robot can navigate from one side to the other. In chess, the computer searches for the optimal move; for the robot, the computer also searches for the optimal move, though it is a very difficult type of move. In molecular synthesis, one to design a molecule with a particular property, and the computer must explore millions of possible configurations of atoms searching for just the right combination. Scheduling problems occur everywhere, from the airline industry trying to optimize flight times to universities trying to minimize final examination conflicts. In computer design, there are VLSI layout problems and logic circuit minimization problems for both combinational and sequential circuits. Search is a fundamental tool for solving such complex problems, and those interested in solving them have much to learn from the creators of chess-playing systems.

“We are at a point in the history of computer chess where the abilities of the top players and the strongest computers are comparable. For the first quarter-century of progress in computer chess, computers were clearly inferior. For the last five years, they have been battling on a relatively even footing with the top players, and the two combatants will probably remain fairly equal for the next several years. But the day is not too far off when the best players will no longer be serious competition. Computers will simply consider too many possibilities and set up positions that are too complex for mere mortals to cope with.

“Will the top players improve to meet the challenge? They certainly will improve some. Track and field records have continually improved because of better training techniques and because of human breeding; the same is happening in the world of chess. Children now have chess programs available that play at the master level. They serve as outstanding sparring partners and teachers. In the past, it was a rare occasion for a beginner to have an opportunity to compete with a master, but now anyone can do so. Further, just as athletes seem to breed athletes, chess players tend to breed chess players. However, when compared to the rapid improvement by computers, man’s progress will be slow and modest. There are limitations on the information processing capabilities of the human mind that cannot change overnight.

“Will Kasparov learn to defeat future programs as he seems to have

done with DEEP BLUE? To some degree, and in the short term, this will happen. The style of computers is currently too rigorous and gives itself away after a number of games. Nevertheless, there seems to be a limit on how much such learning can yield. Currently, players with rating less than 2400 have little chance against DEEP BLUE no matter how many games they play. For Kasparov to have no chance, DEEP BLUE has a long way to go, but the day keeps getting nearer.”

These books are both worthwhile. Those interested in a comprehensive history of computer chess, and, who are not intimidated or put off by the injection of technical discussions, will surely like Newborn’s book. And for an affordable account of the second match, Daniel King has definitely done a credible job.



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