



Call My Bluff

Chess-playing programs are difficult to write, but it is possible even for beginners to construct a simple, 'intelligent' game program



COURTESY OF MILTON BRADLEY LTD

Invisible Hand

Dedicated chess-playing machines contain the same components as home computers: a CPU, RAM, and the program in ROM, and differ only in the method of input and output. The Phantom, shown here, uses a servo-mechanism and magnets that enable the computer to move the chess pieces automatically. When, for example, a knight jumps over another piece, a sophisticated algorithm is employed that removes any obstruction and then replaces it after the move

IAN MCKINNEL

Many people, when they begin writing their own computer programs, dream of the day when they will know enough to be able to write a program that plays chess. This is not because chess programs are unavailable, of course. Such programs abound in number, both as packages available for home computers and in the form of dedicated chess-playing machines. But writing chess programs can become an obsession, even among programmers who are not particularly keen on chess as a game. A possible reason for this is that we regard the game as being a highly intellectual pursuit, and therefore a computer that can play chess is a step towards creating an intelligent machine. It would be very difficult to explain to you how to write a complete chess program from scratch, however. But we can explain some of the principles on which computerised 'intelligent' games are constructed, and to a level where you could write a fairly sophisticated program in BASIC.

It should be remembered, however, that the 'games' we are concerned with are not arcade games, adventures or simulations, all of which

require different programming techniques and different imaginative skills. We'll begin our discussion of intelligent games with what you might consider to be a trivial example, but one that demonstrates many of the principles of intelligent game writing.

Most children (as well as grown-up children) are familiar with the game Scissors-Paper-Stone. The rules are simple: both players must think of one of these three objects, and then simultaneously hold up a hand in a shape representing the chosen object. The winner is determined according to three rules: scissors beats paper (by cutting), paper beats stone (by covering), and stone beats scissors (by blunting them).

To anyone who has followed the Basic Programming course, it should be a simple exercise to write a program to play the computer's part and keep the score. The RND function is used to select one element from a three-element string array containing 'SCISSORS', 'PAPER' and 'STONE'. The chosen element is then PRINTed when the space bar is pressed. The player types in his own choice (the program relies on his honesty), and the