

# The L-Game

- Abstract boardgame
- L-game set
- Three minutes upwards
- A quick and uncomplicated game

## Background

This ingenious little modern game has an interesting origin. Its inventor, Edward de Bono, perhaps better known for his work and books on lateral thinking, was sitting next to the mathematician Professor Littlewood at a dinner. Talk got round to games and the two agreed that Chess achieved difficulty through complexity and that this was aesthetically unsatisfactory. As a challenge, de Bono set out to design a simple game that could still be played with skill. The L game was the result.

## Play

The board is marked with sixteen small squares (4 X 4). Each player has a flat L-shaped piece that exactly covers four squares. In addition, there are two circular neutral pieces slightly smaller than square width. The starting position is shown in Figure 1.

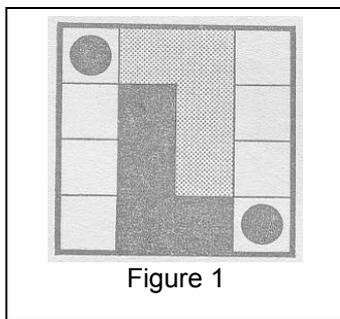


Figure 1

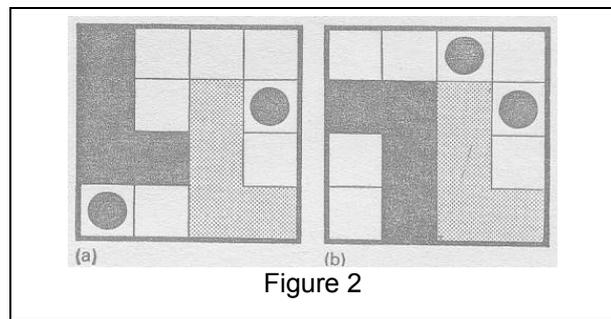
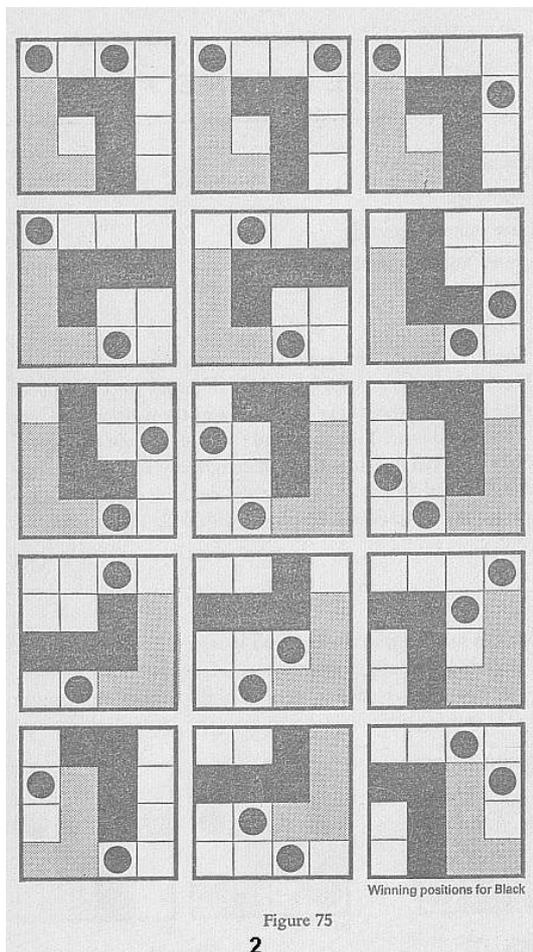


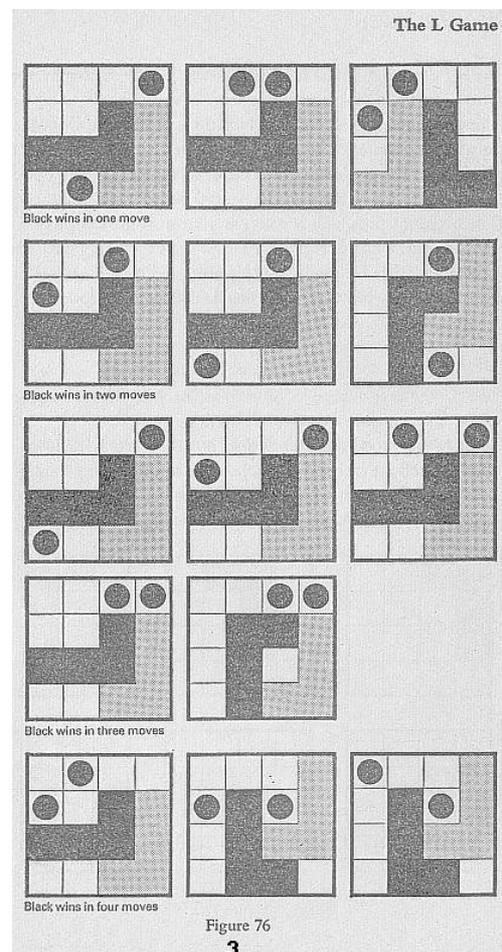
Figure 2



Winning positions for Black

Figure 75

2  
Figure 3



The L Game

Black wins in one move

Black wins in two moves

Black wins in three moves

Black wins in four moves

Figure 76

3  
Figure 4

Play alternates. In the basic (or 'classic') game, each player on his turn picks up his L-piece and replaces it on the board to cover four empty squares, at least one of which must be different from the four squares just vacated. The piece may be turned round or over if desired. After the L-piece has been re-sited the player may optionally move one (but not both) of the neutral pieces to any vacant square.

The object of the game is to leave your opponent without a legal move for his L-piece. Figure 2 shows the dose of a game. Black is to play in 2(a). He repositions his piece and then a neutral man as shown in 2(b). Now White is unable to move and so loses.

## Strategy

The L game is amenable to precise analysis, but so arguably is Chess, and the game is not spoilt by this.

There are a total of 2,296 distinct board positions (18,368 if rotations and reflections are included). There are 15 basic winning positions - that is, where one L-piece is unable to move. There are 10 different arrangements of the two L-pieces, 4 of them allowing alternative placings of the neutral piece(s). These 15 positions are illustrated in Figure 3.

A further 14 positions are known to be wins (Figure 4) and it is also apparently possible to force a win after five moves, which is claimed to be the maximum, but there is probably scope for more research.

Analysis of these winning positions is revealing. First, consider the six fundamental ways, each a translation of another, in which an L-piece can be placed on the board (Figure 5). Any other position is a rotation or reflection of one of these six positions. You will see that in every winning position the loser has his L-piece covering a corner square - that is, it is in one or other of the fundamental positions 5a, 5c or 5d. You will also see that in 22 of the 29 winning positions the trapped piece is in position 5a, and that in all but one of the 29 cases the winner's L-piece is occupying one or other of the three fundamental positions where the piece does not cover a corner square (5b, 5e, 5f).

Now a sound strategy becomes apparent:

(1) Do not cover a corner square with your L-piece and, in particular, do not play your piece where it has total contact with the board edge (5a).

(2) Use the neutral pieces to stop your opponent occupying one of the safe positions.

A more positive strategy will require memory of the known winning positions and the ability to plan ahead. Planning requires spatial perception, however, and most people find this difficult (I do). Try working out, without moving the pieces, how to force the win in the three-move examples given (Figure 76) and you will see what I mean.

One may conclude that the basic game should always be drawn between good players (but again, that is theoretically true of Chess too!).

## Variants

Fortunately, there are a llumber of good variants of the L game, some suggested by the inventor, that rescue it from rote play. In the scoring game, the four squares in one corner of the board are marked. The game proceeds exactly as in the basic game except that a player scores a point every time he covers a marked square. Thus, if position 5a is open, three points may be gained at the risk that the piece may get trapped. Five points are earned for blocking the L-piece (I would award more); the starting position is then resumed; The winner is the first to reach an agreed total or who has the most points at an agreed time.

In another variant, play follows the basic game, except that the winner is the player who is able to place his L-piece in a position symmetrically equivalent to that of his opponent's. In this version, only one position of the L-piece (Figure 5e) is safe and the neutrals are of greater importance.

Other variants may suggest themselves. perhaps using different shapes and boards (compare Golomb's game of Pentominoes), but the essence of the L game is its simplicity.

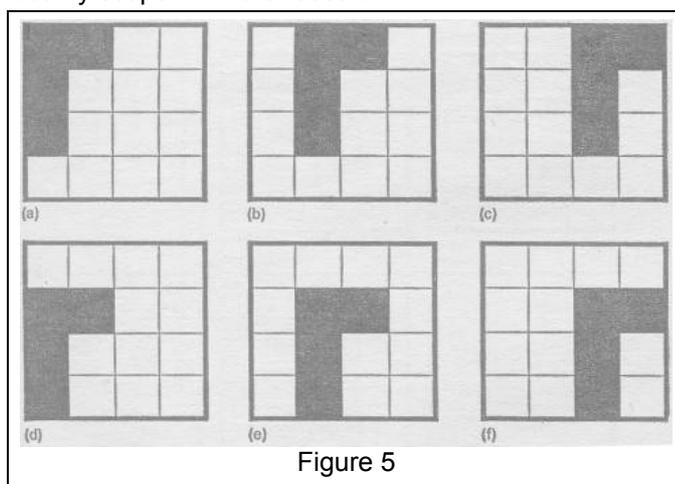


Figure 5