Location, Location, Location

Figures

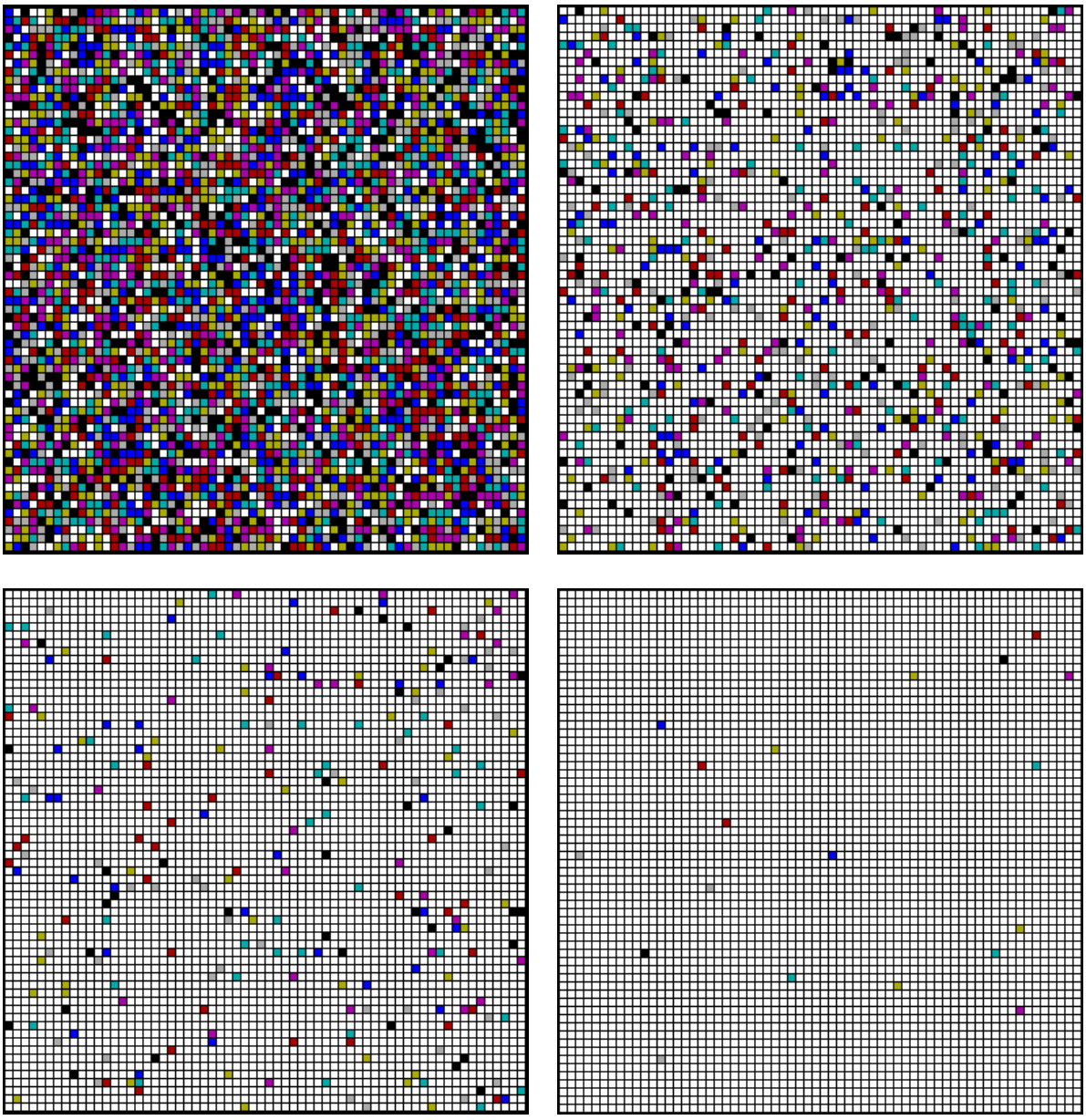

Fig. 1 Typical evolution of randomized array of 8 Prisoner's Dilemma strategies, using global replacement: 5% of array replaced with the most successful strategy over all each generation. TFT in black, All-D in white. Generations 1, 25, 50, and 100 shown.

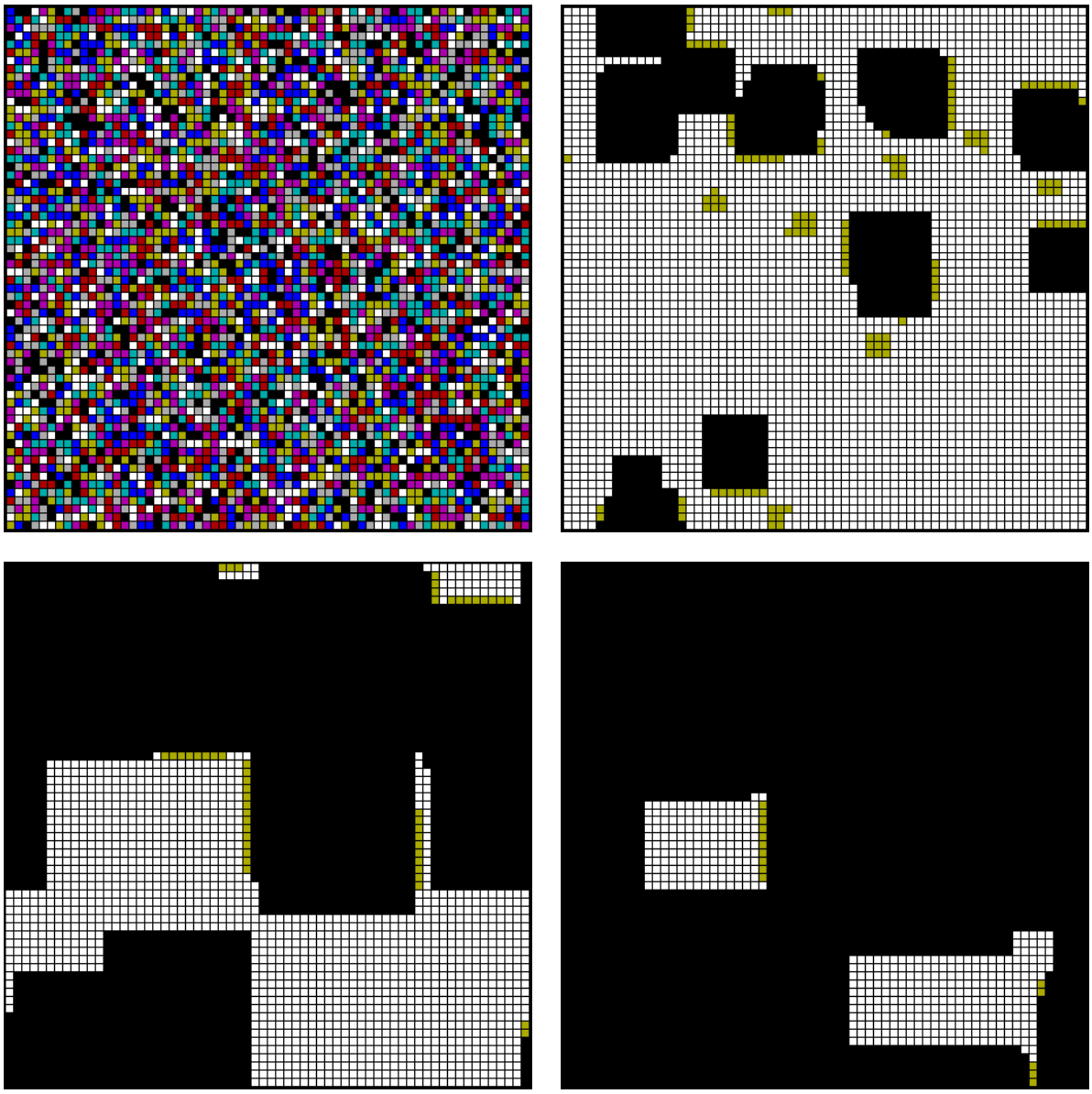

Fig. 2 Conquest by TFT in a spatialized environment. Typical evolution of randomized array of 8 Prisoner's Dilemma strategies, where cells copy the strategy of their most successful neighbor. TFT in black, All-D in white. Generations 1, 5, 10, and 15 shown.

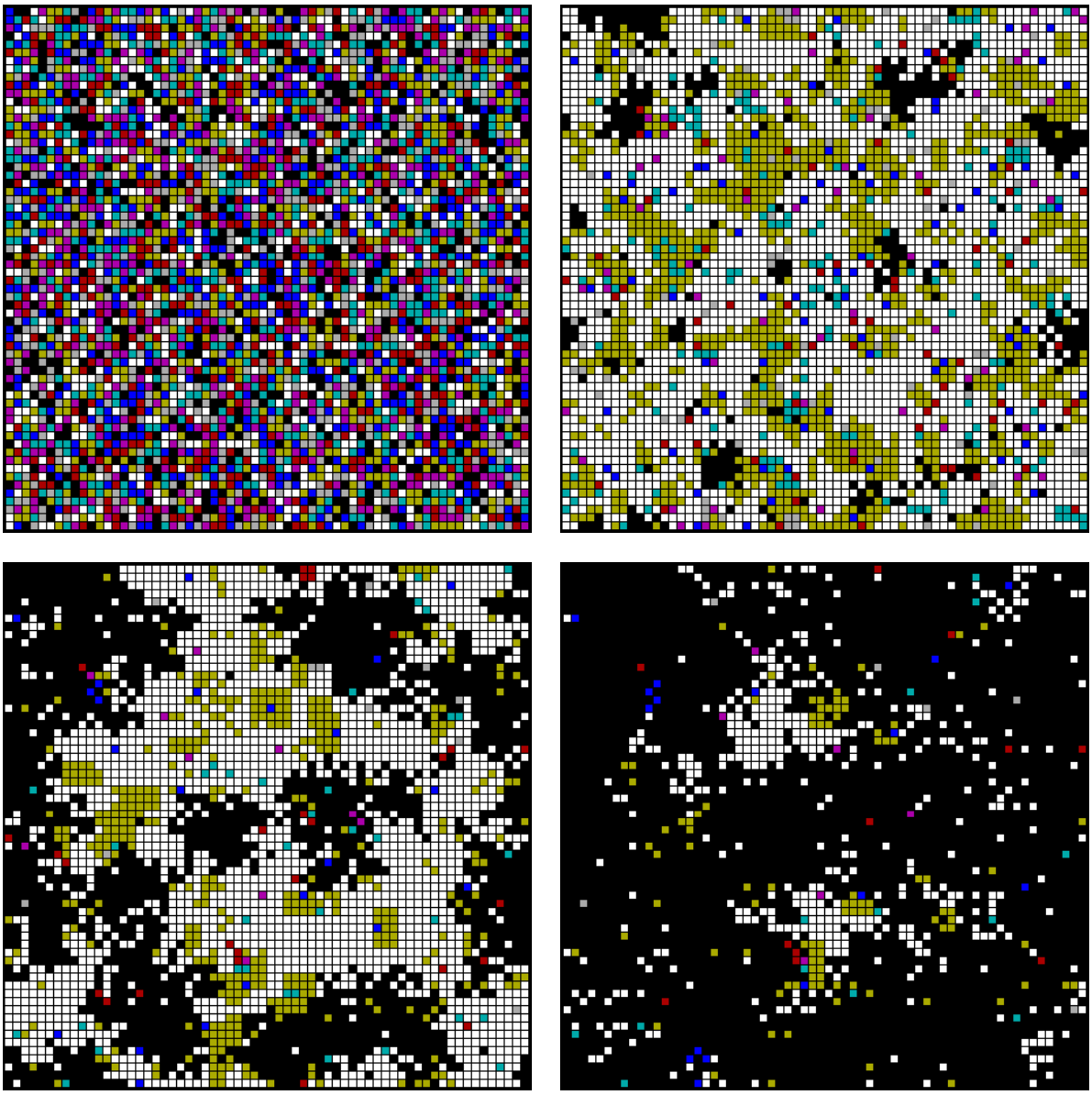

Fig. 3 Conquest by TFT in a spatialized environment with non-synchronous updating, 1% of cells updated each generation. TFT in black, All-D in white. Generations 1, 200, 400, and 600 shown.

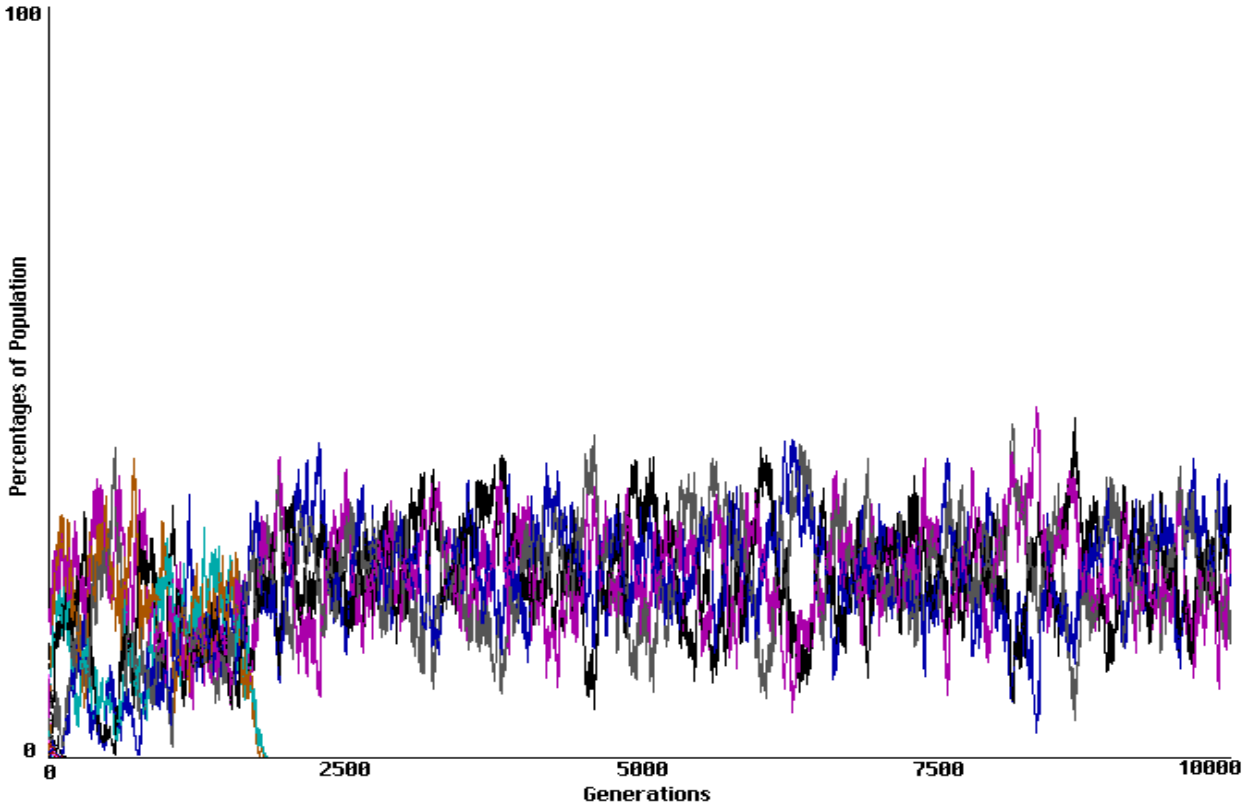

Fig. 4 10,000 confusing generations of a global genetic algorithm. No perfect communicators play any significant role.

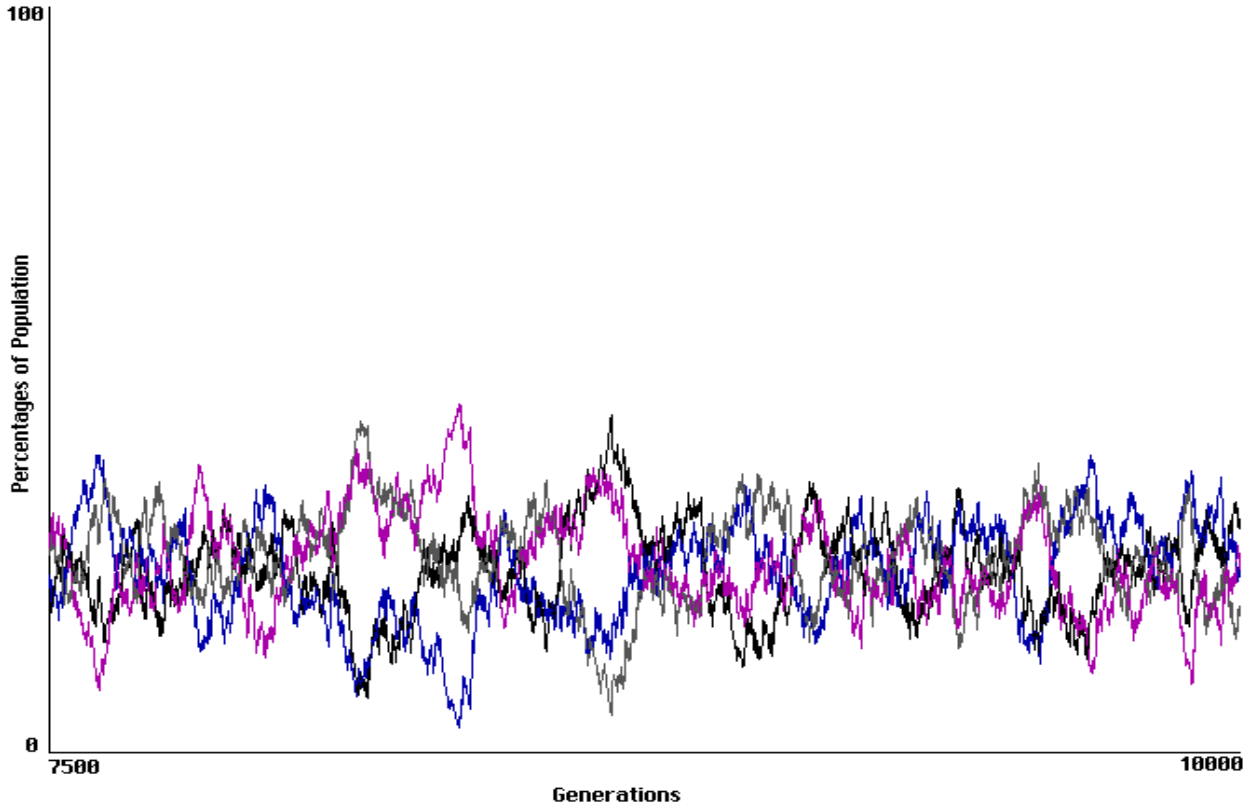

Fig. 5 The last 2,500 generations of the global genetic algorithm.

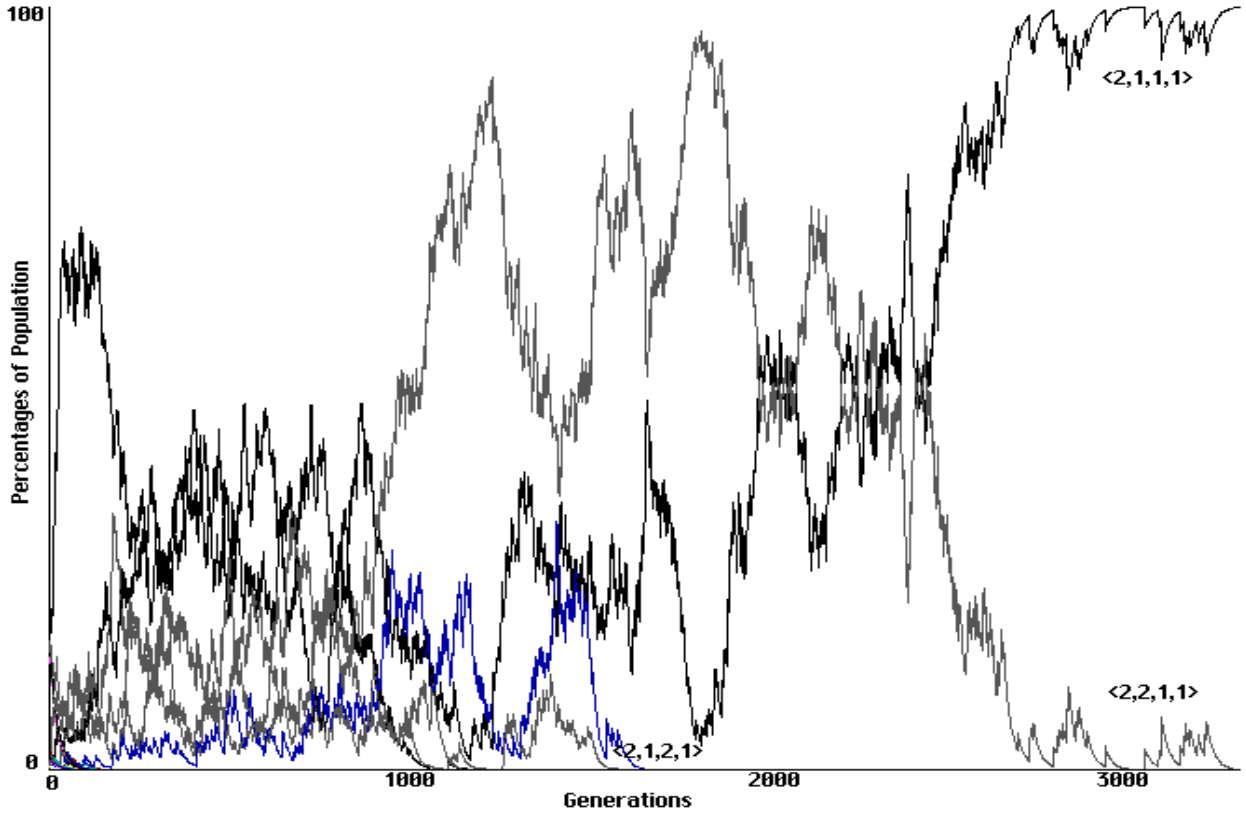

Fig. 6 3221 generations of an alternative global genetic algorithm. Here the strategies of the two top-scoring cells are mated, whether those strategies are distinct or not.

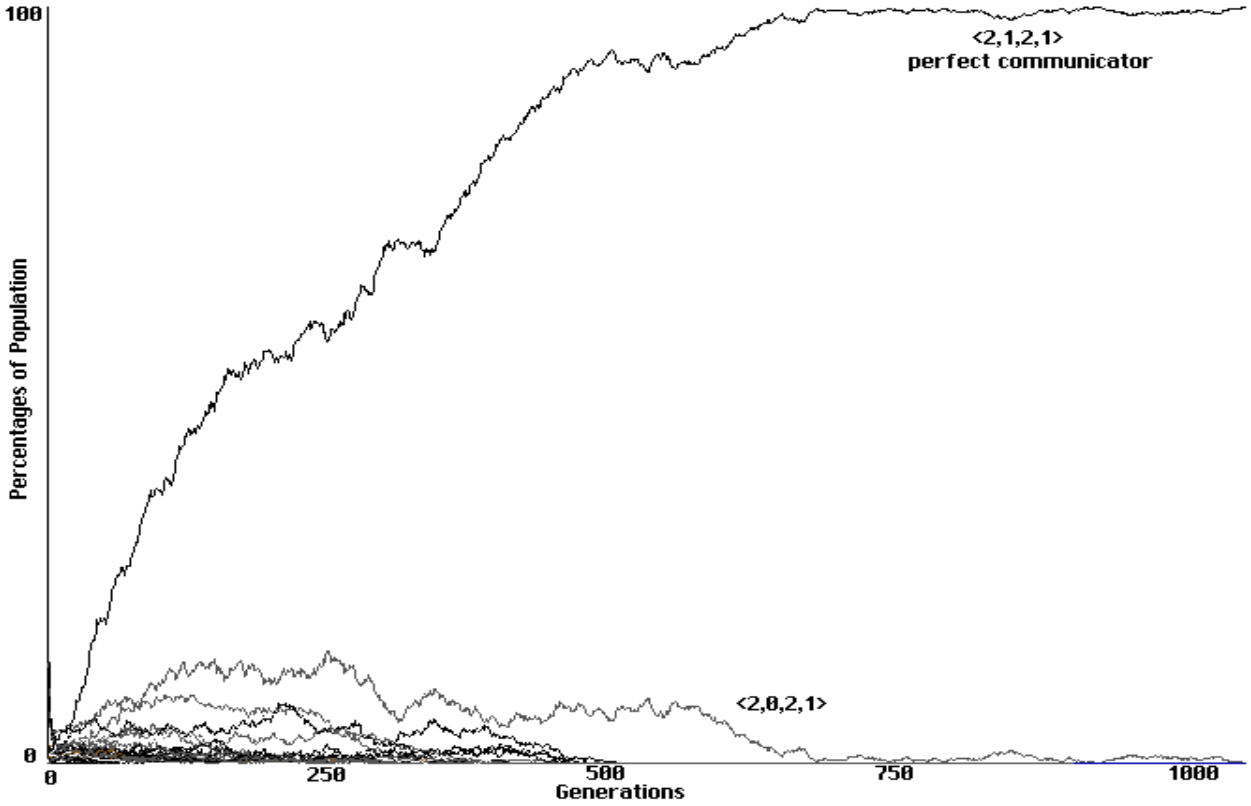

Fig.7 Emergence of perfect communicator from randomized array of 7 Adams and Eves, using local genetic algorithm in a spatialized environment. 1039 generations shown.

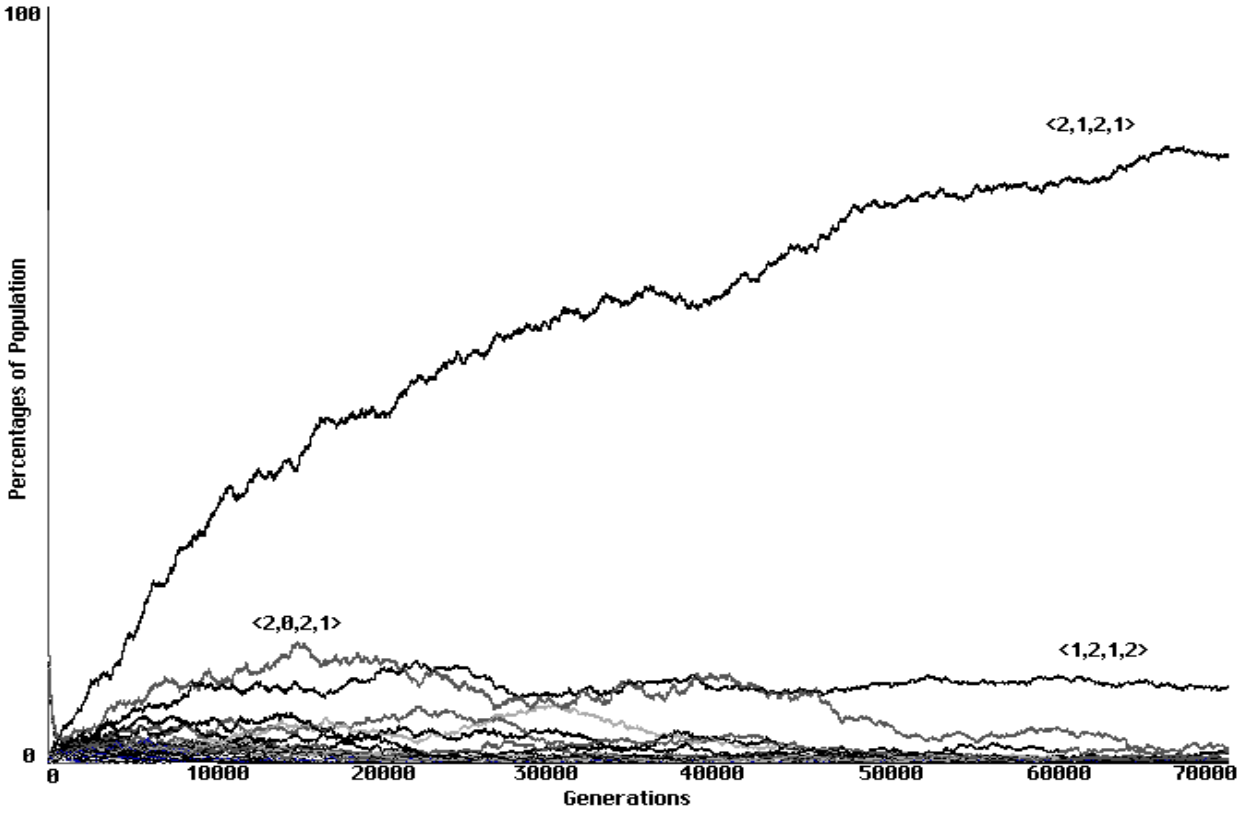

Fig.8 Emergence of a perfect communicator in non-synchronous localized genetic algorithm.

70,000 generations shown.

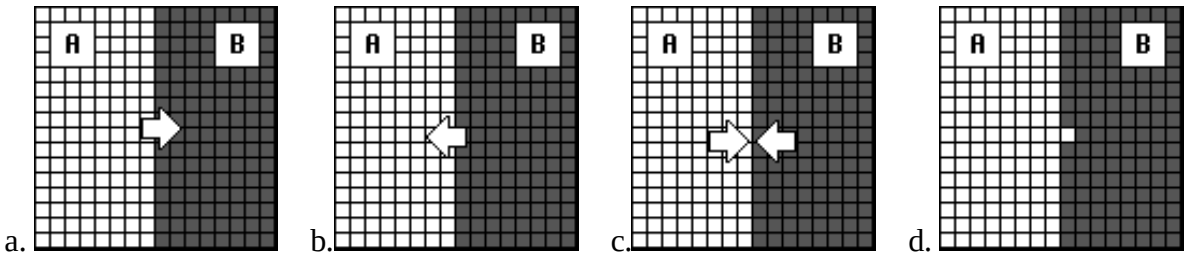

Fig. 9 Patterns of invasion. (a) A strategy A 'inferior' in the sense that its score against itself is smaller can nonetheless invade B. (b) B can invade A although A's score against B is higher than B's against A. (c) Standoff (d) Change in a single cell increases complexity.

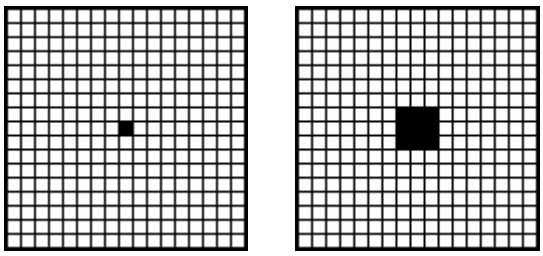

Fig. 10 Invasion from a single cell.

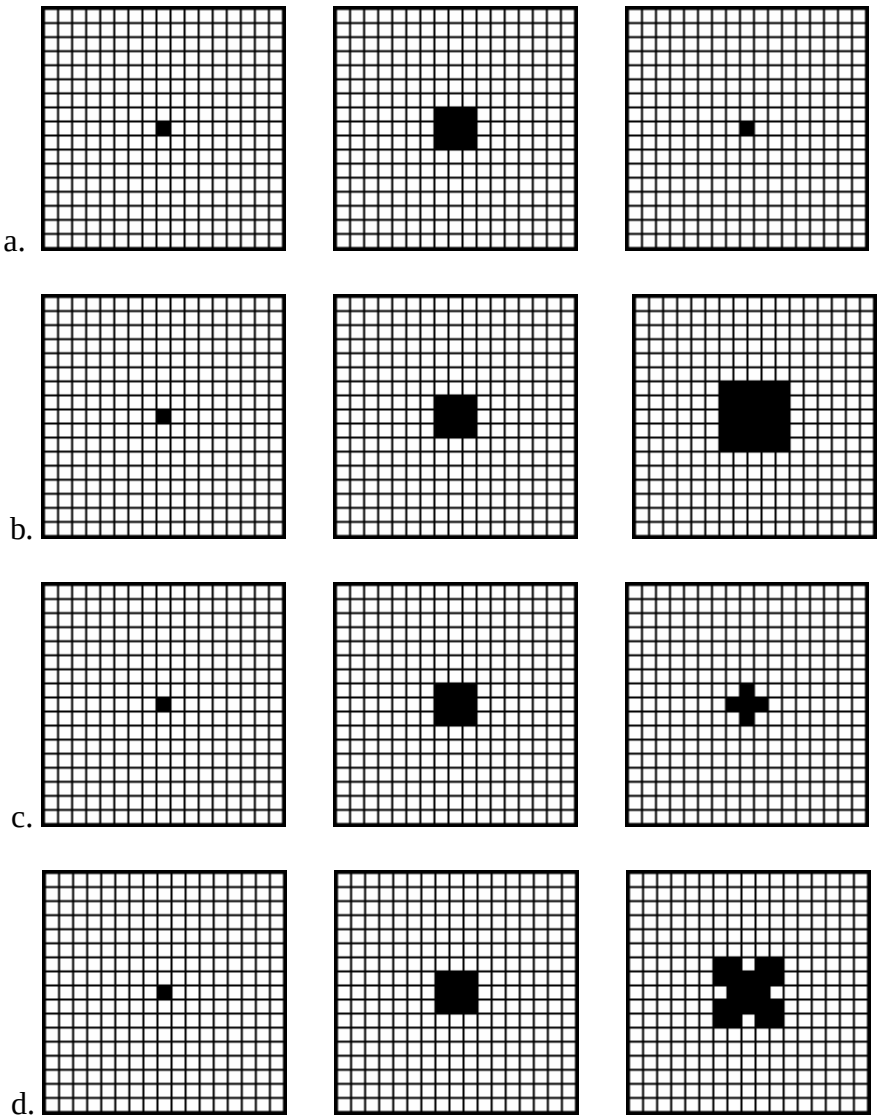

Fig. 11. Different patterns from a developed 9-cell block.

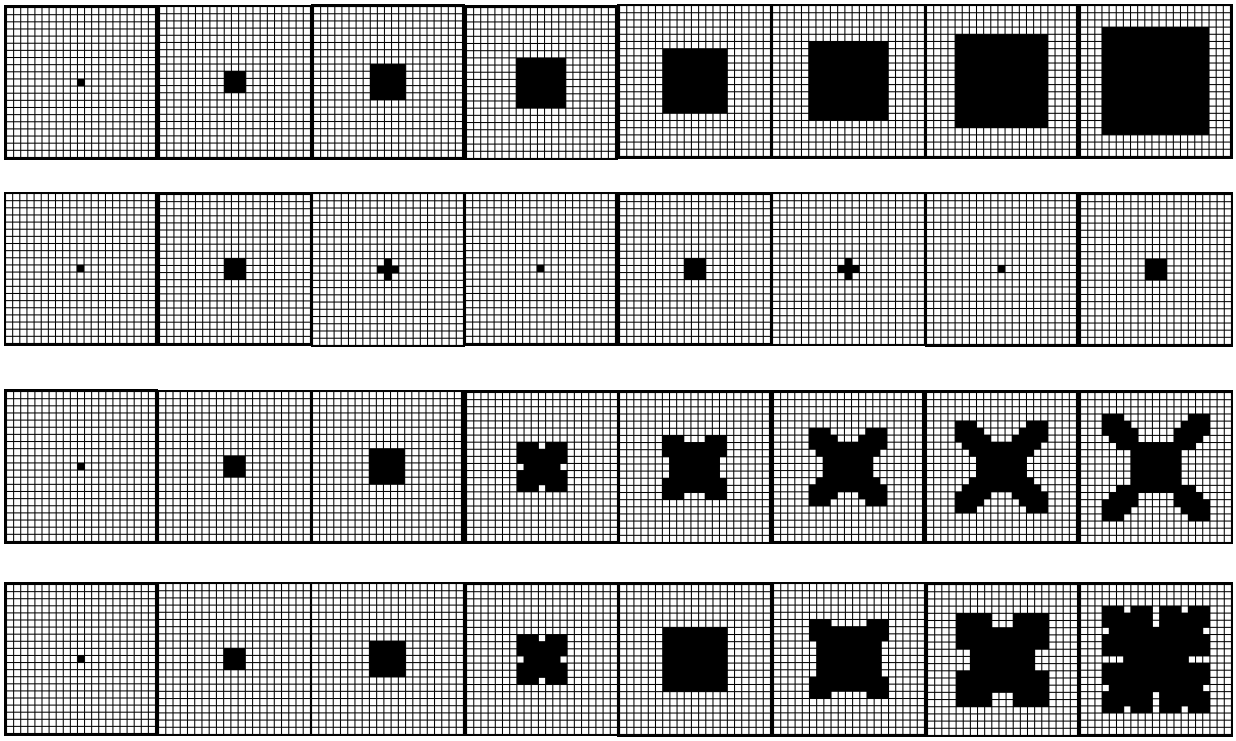

Fig. 12 Different forms of ‘invasion’. Values for <AA, AB, BA, BB> in each case are: <1, 3, 3, 4>, <2, 1, 2.3, 1>, <2, 1, 2.5, 1.4>, and <2, 1, 2.5, 1.6>. Here patterns 1 and 4 invade to conquest. Patterns 2 and 3 are self-limiting.

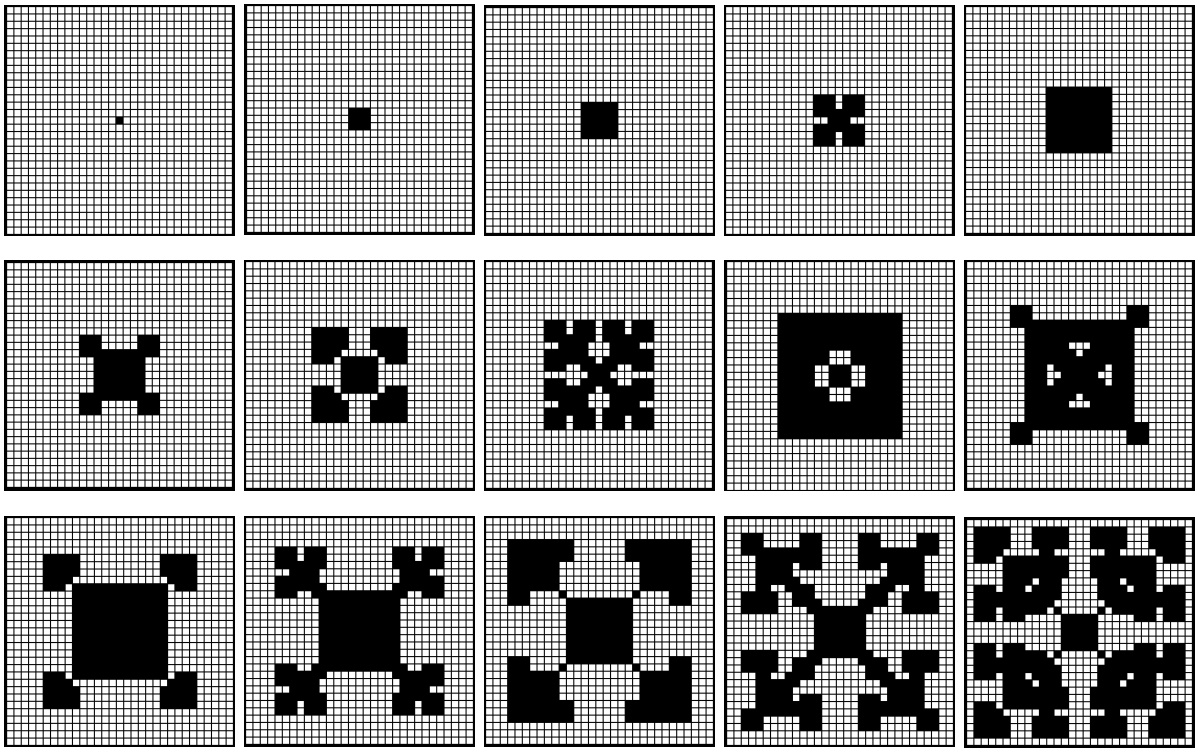

Figure 13. Invasion pattern for a single cell for <AA, AB, BA, BB> values of <3.49, 1, 5, 1>.