

The Origin of Individuals

In the 17th century, Descartes introduced the metaphor of the machine to explain the functioning of living beings. In the 18th century, La Mettrie extended the metaphor to Man. The clock was then used as the paradigm of the machine. In the 20th century, this metaphor still held but the clock was replaced by a computer. Nowadays, the organism is viewed as a robot obeying signals emanating from a computer program controlled by genetic information. This book shows that such a conception leads to contradictions not only in the theory of biology but also in its experimental research program, thereby impeding its development. The analysis of this problem is based on the most recent experimental data obtained in molecular biology as well as the history and philosophy of biology. It shows that the machine theory did not succeed in breaking with Aristotle's finalism. The book presents a new approach to biological systems based on cellular Darwinism. Genes are ruled by probabilistic mechanisms allowing cells to differentiate stochastically. Embryo development is not governed by a determinist genetic programme but by natural selection occurring among cell populations inside the organism. This theory has considerable philosophical consequences. Man may be a machine but he is a random one.

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