

The confusion between artificial and natural

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Since the scientific revolution, our "Civilization of Machines" (Paolo Rossi) has added to the richness of physico-mathematics an abusive tackling of the artificial on nature. According to the times, the living, or even the whole of nature, was first a clock, then a thermal machine (Lavoisier), then a digital computer. Today, Wolfram explains that a stone falls because it is programmed to fall (see [1]). Embryogenesis implements the genetic program (Jacob and a thousand others), the production of evolutionary novelty would be a diagonal process in the sense of Gödel (Danchin, see [2]), a mechanism that is added to the "evolutionary noise" due to the elaboration of information by macromolecular interactions, a kind of "Boolean algebra, like in a computer" (Monod, see [3]). The impact of our extraordinary discrete state machine that we invented for the elaboration of information has led the mystics of computability to believe that beautiful mathematical invariants, at its origin, are absolutes intrinsic to the brain, the genome and the world. A fierce dualism accompanies this tackling and erases the radical materiality of the living, which is made of this material, this chemistry, this flesh and no other, without split software/hardware. In a nature-computer, it is possible to program GMOs, edit the genome, act by mechanisms without constraints on a world-machine provided with a fuel tank at disposal. Scientism, through geodesics and algorithms, aims to make the ecosystem and our lives intelligible and govern it through a single concept, our beautiful alpha-numerical invention, the notion of a program. On the contrary, a "savoir être" in phenomena, in their diversity, has allowed scientific invention, from Archimedes to Darwin, from Einstein to Turing [4]. today, it is necessary to know how to be an organism [5] in an ecosystem that is an entanglement of the living, without a space of pre-determined possibilities, whose "historicized" invariance, 6, is a mathematical challenge well beyond optimality and formal invariance.

Références :

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- 6 - Giuseppe Longo. [How Future Depends on Past Histories and Rare Events in Systems of Life,](#) **Foundations of Science**, (DOI), 2017 ([biolog-observ-history-future.pdf](#)) (Révision à paraître en

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